CO-OPERATING IN SOUTHERN ELECTRIFICATION

See Advert Page 12

MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

MOTORWAY CONSTRUCTION AND OPERATION

See Pages 2, 3, etc.

VOL. LXXXII No. 2111 [*Registered at the G.P.O. as a newspaper*] LONDON, OCTOBER 31, 1959 PRICE NINEPENCE

CURRENT TOPICS

Future of Municipal Transport

SOUND commonsense on the future of municipal road passenger transport was expressed by Mr. A. F. Neal, new president of the Municipal Passenger Transport Association, on his first appearance at an area function since the Edinburgh conference. The occasion was a meeting of Area C of the association at Salford City Art Gallery. At a luncheon following the meeting presided over by Alderman T. C. Loftus, Mayor of Salford, Alderman Frank Cowin, chairman of the city's transport committee, proposed "The M.P.T.A.," through which they were able to hand on their secrets of success for the public benefit. In his reply Mr. Neal said the association had 20 objects; they might be summarised as "doing everything to promote efficient operation of public passenger transport." One aim was to arrange meetings of those who controlled undertakings; through the hospitality of Salford they were fulfilling that one. If they had a fault it was in being submerged in the detail of the day and failing to plan ahead for the future, in which the increasing impact of the private vehicle would be felt. It abstracted traffic and obstructed operation. There was now one car to every three families; in five years or so it would be one to every two and the motor industry was looking forward to the day when there would be one in every family. They must not delude themselves that the abolition of the fuel tax would be the complete answer to their problems. They wanted people to be able to enjoy motoring, but they must impress on the national government and local authorities that if p.s.v. services were to survive they must be given every encouragement. The M.P.T.A. had done a lot in the past; it had still more to do in the future. "The City of Salford" was proposed by Alderman J. P. Ashton, chairman of Area C, and was responded to by the mayor, who commended the co-operative spirit of neighbouring authorities.

Railway Capacity

ANOTHER attack on the reconstruction of the railway system has appeared this week in the form of a letter to the *Daily Telegraph* from the pen of Mr. M. J. Douglass, who describes himself as "hon. co-ordinator of the Railway Conversion League." There is once more the suggestion that the railway deficit would be £250 million rather than £90 million if "normal accounting methods were used" and that the railways are practically idle. Railways are not fundamentally obsolete as is suggested; they are still—despite motorways and other developments—the only form of land transport suitable for what might be called mass production methods and to bring them up to date rather than scrap them for a doubtfully useful road system on their sites is sound sense. So busy are they that modernisation work can be carried out only with difficulty. The London—Birmingham route of the London Midland Region is a case in point. The chief civil engineer is having extra possessions, mainly at weekends, to carry out rehabilitation works and prepare for electric traction; during the week these involve a number of extra speed restictions so that express passenger and fast freight trains have to be allowed 32 min. extra time between London and Crewe. On a representative weekday, excluding the local electric services, about 220 passenger trains and 130 freight trains are booked through Watford, of which some 120 are main-line expresses. Of the latter 14 are being diverted to other routes by concentrating the fast London—Birmingham service on the Paddington—Snow Hill route, and by diversions of Manchester facilities to St. Pancras. Removal of these services will prevent the reduced line capacity caused by the lower overall speed creating serious delay. The 14 trains represent the full measure of reduction of services on the main line between Euston and Rugby at present and whilst it is anticipated that the more important freight services will be retained, diversions to other routes, particularly for freight traffic, appear to be inevitable. In addition to the chief civil engineer's work and the further speed restrictions arising from such possessions, the chief mechanical and electrical engineer and the signal engineer will also require to work continuously on the routes to be electrified. The former will require considerable weekday possessions as well as at weekends and the signal engineer's work is bound to cause interference with signals during the modernisation period. The work of these two departments naturally has to follow the chief civil engineer's work. Movement of materials trains, constructional trains, cranes and Matisa machines for working between trains on weekdays and at weekends is also bound to have an influence on line capacity. But the result will, of course, be a railway with greatly enhanced capacity for dealing with traffic.

The Railwaymen's Case

IN support of the policy of co-ordination the N.U.R. pamphlet quoted views expressed by us in 1952 when criticising the proposal, subsequently implemented under the Transport Act of 1953, to denationalise long-distance road haulage. We then attacked the intention to break up "the well-knit road-rail machine which has been built up with infinite pains and at enormous expense to the Exchequer," pointing out that the recently completed road transport organisation had "brought new standards of service, vehicle operation, engineering and employment into the road haulage industry." We certainly do not retract from these observations. Their truth indeed was eventually substantiated by the material amendments found to be necessary and desirable in the disposal scheme. On the other hand, our opposition then to denationalisation does not imply support now for re-nationalisation, particularly in view of the Commission's own appeal, in its 1956 report, for freedom from further political interference. Although there are further natural developments in co-ordination which can assist all forms of public transport against the prevalent vogue for private transport of both passengers and goods, co-ordination does not imply unification; whilst we regard as fundamentally sound the statement's historical survey of the transport position we cannot support in general the remedial measures it proposes. Nevertheless, in recent years we have frequently emphasised the need for fresh study of the whole problem of inland transport, a need which becomes increasingly obvious with the growth of private carriage of individuals and freight. In such a study the railwaymen's point of view cannot be ignored; it is clearly and concisely set forth in the N.U.R.'s statement of policy.

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Transport Policy and the N.U.R.

IN a letter in our last issue Mr. S. F. Greene, general secretary of the National Union of Railwaymen, accuses us of injustice in our review (October 17 issue) of the union's statement of policy on transport. He denies that its primary purpose is to improve the lot of railwaymen, although its opening paragraph (which we quoted) does in fact convey that impression, despite subsequent assurances that the interests of the community should predominate. Our reason for returning to the subject now is to assure Mr. Greene that we can endorse many of the arguments in his pamphlet; indeed we regard as fair and factual its analysis of the treatment meted out to railways during their chequered existence, although we have always felt they were slow off the mark in coping with the fast growing road competition of the twenties. Nor do we quarrel with the pamphlet's enumeration of the difficulties confronting the B.T.C. in efforts to fulfil its legal obligations. From the financial point of view we agree that the Commission has been faced with an impossible task—"They were expected to pay interest on capital structure and to redeem the capital without first having the physical resources necessary to enable them to earn sufficient revenue; without freedom to make economic charges for their services at the same time as they were forced to pay current prices for the commodities they required; and in an atmosphere of great difficulty caused by Government neglect of their investment needs and by undue interference in their management"—for much of which its creators must, of course, share the blame. To the extent that the results of this treatment are reflected in the level of wages, railwaymen are entitled to consideration, bearing in mind, of course, the independent review now in progress under the chairmanship of Mr. C. W. Guillebaud with the object of assimilating wages and conditions to other industries.

Commonsense In Night Parking

ALTHOUGH it is four years since the introduction of the regulations which permitted vehicles to stand without lights under certain circumstances, it is obvious that many drivers still do not understand the regulations and do not appreciate the dangers which careless parking at night may present to other drivers, as pointed out editorially in MODERN TRANSPORT of October 24. The Commissioner of Police of the Metropolis now emphasises that one of the most important safety measures to remember about night time parking is that a vehicle, whether it shows lights or not, must be parked the "right" way (i.e., with its left or nearside close against the kerb). This is absolutely essential in poor visibility when a driver approaching a stationary vehicle which is parked the wrong way may easily conclude that he is on the wrong side of the road, with disastrous consequences. Even at the cost of some inconvenience, vehicles must be turned to face the correct way before being left. Further conditions which must be satisfied when vehicles are left without lights are that they must neither be within 15 yards of a road junction nor more than 25 yards fom a lighted street lamp. If they are left on a road which is used by buses, their lights must be left on. Parking lights are permissible in certain circumstances, information on which can be obtained from local police stations. It is particularly dangerous to cover vehicles completely with sheets or tarpaulins because they then become almost invisible to other traffic in bad weather.

Outlook for Coal

LIKE the B.T.C., the National Coal Board is having to go to Parliament, in this case through the Minister of Power, for approval for an increase in borrowing powers. In *Revised Plan for Coal*, just issued by the Board from Hobart House, S.W.1 (price 3s. 6d.), capital expenditure over the next six years is estimated at £511 million and the needed increase in borrowing powers £100 million. The measure of the effect of a dwindling coal industry on the fortunes of transport operators is indicated by the Board's aim to close up to 240 collieries. Manpower cuts in the coalfields will vary from about 2,000 in the East Midlands to 16,000 in Durham, although some of the highest proportional cuts may be in Lancashire and Kent. Sir John Bowman, chairman of the Board, told a Press conference of a decision, in consultation with consumer interests, that by 1965 the electricity and steel industries would want more coal, the gas industry less and the railways much less, while domestic consumption would probably decline. The general industrial market was less certain and it was here that the coal industry was competing most with oil. The Board intended to fight back by offering coal better suited in type and quality to particular users, and by more efficient distribution; in the latter respect there is surely a big leeway to make up. There would, he said, be a big cut in open-cast production, in spite of its cheapness, rather than close collieries of equivalent output.

Air Fares and the Aircraft Industry

SPEAKING at the jubilee luncheon of the Air League of the British Empire at the Mansion House on Monday, H.R.H. the Prince Philip, Duke of Edinburgh, maintained that it was better to look to the present when so many interesting things were happening in aviation than to the achievements of the League in the past 50 years. The recent appointment of a special Minister of Aviation was greatly to be welcomed and support for him would undoubtedly be forthcoming provided he did what the members of the Air League suggested. The fare reductions which British European Airways was to make next summer was another very pleasant development, but it must be said that there was strong disappointment at the obstinate refusal of I.A.T.A. to recognise the force of the arguments for cheaper fares on world routes. They were awaiting with considerable interest to see what B.O.A.C. was going to do about those routes which were not subject to I.A.T.A. agreement. It should be made clear that the pressure for lower fares was not for the benefit of members who were regular travellers but sprang from the belief that reduced fares would stimulate more traffic, which, in turn, would produce a demand for more aircraft. That was just what the British aircraft industry would like. There were many reasons for the present condition of the industry and one of the most potent was the increasingly rugged competition from the American industry with that in all other countries, and particularly in Europe. This problem could only be tackled by governments, operators and industries together and the Air League would like to see closer co-operation in the Commonwealth to that end.

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A BIG SERVICE ON A BIG ROAD

When John Laing & Son Ltd. got the contract for the first part of the London-Birmingham Motorway, they got themselves £16,000,000 worth of important, exciting, ambitious hard work. They got themselves some headaches too, for building 55 miles of big, brand-new road across fields and farms and railway lines, all in nineteen months, is a tough assignment involving armies of men, millions of pounds worth of machinery and vast quantities of fuel.

One headache less for Laing

One of the biggest headaches was fuel delivery, how to feed the machines wherever they were, so as to keep them working night and day. On three of the four sections, Shell-Mex and B.P. took over this job lock, stock and bowser. And they plumped it straight in the capable lap of Eric Head, their Worcester Branch Operations Officer, who had to start from scratch.

A new sort of fuelling job

Eric Head had no book to follow on this assignment. An operation as big as this was entirely new. He had to build his own team, make his own rules, and solve his own problems—such problems as how to get fuel to a couple of giant bulldozers working away in their own deep sea of mud, maybe three miles from the nearest road. And how to get 15,000 gallons of gas oil a day, as well as all the motor spirit and much of the lubricants, to the three depots he set up to serve his three sections.

Sorting it out

After setting up his depots, organising his fifteen tankers and handpicking his volunteer team, Eric Head became the fuelling trouble-shooter. Wherever there was a supply problem anywhere along his length of the site, he would shoot straight to it, and sort it out. That and the fact that he made it his business to know everyone everywhere on the site, was why Shell-Mex and B.P. did such a good job of work for Laing.

A big service for big jobs

There is a lot more road building on the way. In eight years the country is spending £450,000,000 on the roads. And wherever there is a big job to be done, Shell-Mex and B.P. have a man like Eric Head ready and waiting to keep things moving, even if he has to invent new ways to do it.

And that's not all

The name Shell-Mex and B.P. cropped up on this big job somewhere else too. They supplied the bulk of the petroleum bitumen, the binder for the road surfacing. They are specialists in bitumen of all grades — and in its supply — for safe, lasting roads.

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MODERN TRANSPORT

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

Motorways

MONDAY next, November 2, will be a red-letter day in the annals of British highways, for the opening by Mr. Ernest Marples, Minister of Transport, of the St. Albans bypass and the so-called London—Birmingham motorway (which gets as near London as Bushey on A41 and as near Birmingham as Dunchurch) does mark a very real advance. At last we have a 70-mile stretch of modern road restricted to motor vehicles only, as compared with the short specimen stretch of the Preston bypass—a road only as long as the tunnels on the *Via del Sole*, current Italian project from Milan to Naples. It is a pity that we are so far behind, because we might have led the world. Motorway projects here are by no means new. A Bill was introduced in the House of Commons in 1922 for a Coventry—Manchester project. In 1925 the incorporation of London and South Coast Motorways was sought; the object of the company was the London—Brighton motorway, but actually the special road would have extended from Tolworth on the Kingston bypass via Pebble Combe (gradient 1 in 32) and Horsham to Albourne near Hurstpierpoint. As a motorway it might not have been very good; the single carriageway proposed was to have been 50 ft. wide. There were, however, to have been eight non-conflicting junctions, 52 main bridges and 170 accommodation bridges. The cost was estimated at £2,580,000 and the promoters expected a handsome profit on tolls.

Slow Progress

PUBLIC opinion in this country was apparently not ready for this or subsequent projects. Between the wars we did not even succeed in persuading successive governments to implement some of the bright schemes evolved by the Road Board in 1909-10—indeed, we are only just completing its Cromwell Road Extension project which may make a good introduction for the London and South Wales motorway. While we moved with leaden steps dictator-led countries, Italy and Germany, sprang into the autostrada and autobahn eras; it was small comfort that the original autobahn dimensions were taken from the example of our London—Southend road. Free-enterprise America produced parkways, throughways, clearways and finally the Pennsylvania turnpike. One may speculate on whether the incomplete autobahn system hindered rather than aided the German war effort by diverting attention from essential needs on existing roads, some of which remain inadequate for their heavy traffics to this day. At the end of the war we produced schemes for hundreds of miles of motorway and to his eternal credit Mr. Alfred Barnes piloted his Special Roads Act through Parliament in 1946. Then Treasury policy formed an obstacle until at last Mr. Harold Watkinson succeeded in inculcating a different attitude. His efforts resulted in a remarkable feat of civil engineering in completing the projects to be opened next Monday in the short space of 19 months—a time that will now, in the public view, be a pace setter for every other comparable civil engineering job. Nevertheless, just as in the railway building era, personal rights, especially of those whose property may be engulfed, may form a source of delay. It is one that can hardly be reduced without stamping on human feelings or possibly perpetrating serious injustice. This aspect of motorway construction must be specially felt in connection with access roads from town centres to the new highways, as exemplified with the projected urban motorway through Hendon.

Rival Surfaces

ONE fascinating aspect of the present scheme is that the opportunity has been taken to provide asphalt running surfaces on the motorway north of Slip End, Luton, while entirely new concrete techniques have been used on the St. Albans bypass south of Slip End, the point at which the opening ceremony takes place. Hitherto this country has not been a keen exponent of concrete building which involves the rhythmic jolt of the passage of the expansion joints. However, in Germany, 95 per cent of autobahnen constructed before the war were concrete. The percentage of autobahnen constructed in concrete since the war has been 91.5 per cent between 1950 and 1955, and 90.4 per cent between 1955 and 1957, the percentage drop representing a growing interest in bitumen surfaces. Of the American freeways, the most renowned motorways in the world, 71 per cent of urban freeways and 73 per cent of rural freeways are in concrete. More than two-thirds of U.S.A. toll motorways, covering over 2,000 miles in all, are also concrete. An article elsewhere in this issue sets out the different constructional techniques for the asphalt and concrete sections.

Films

FILMS have come into their own as a means of publicising the great new highway and also as a way of inculcating good behaviour on the part of its users. The Ministry attempts in this direction are commended on another page. The new Laing film *Motorway*, which is a sequel to an earlier company production, *Major Road Ahead*, is a 30-minute record in colour of the high-speed building of 55 miles of Britain's first full-length motorway across the green fields of five counties. It ranges along the route of the motorway, telling many facets of the story. The vast co-ordinated enterprise has been accomplished in record time by a highly mechanised labour force. Well depicted are the painstaking preliminary work, the organisation of supplies, the building of 134 bridges across roads, rivers, canals and railways, the hard labour of the staff and the relaxation at the end of the day. While due allowance had been made for the average English summer, none could have foreseen the almost incessant rain and flooding of that first summer of 1958, when at times work was brought to a complete standstill. The fog, snow and ice of winter were not unexpected and did not halt vital bridge construction. Then, in the spring of 1959, came a mighty resurgence of effort which was sustained and increased during the months of good weather that followed until the task was achieved on schedule.

NEWS SUMMARY

REGULAR coach services which will commence to use the London—Birmingham motorway on November 2 are the new Birmingham—London service of the Birmingham and Midland Motor Omnibus Co., Limited, which will normally be operated thrice daily with a journey time of 3 hr. 25 min. Birch Brothers, Limited, is introducing a variation of its London—Bedford—Rushden service running nonstop between Bedford and East Finchley. Journey time between London and Bedford is 108 min. The initial frequency provides three journeys Monday to Friday, six on Saturday, and four on Sunday. United Counties Omnibus Services, Limited, is to send fully-laden duplicates on its London—Nottingham service via the motorway and hopes to initiate a regular service very soon. Meanwhile it and London Transport are going to operate tours to see the motorway from various centres.

Three British Transport films were included among seven British short films selected for showing at the Festival of British Films in Russia during October. The Festival, which was arranged by the Soviet Relations Committee of the British Council, was the first to be held in the Soviet Union.

Mr. H. C. Johnson's presidential address to the Railway Students Association dealt comprehensively with staff selection and training.

Some London Transport railway signalling developments on the District and East London Lines have been brought into service. See page 14.

The Lead Development Association has given a première of its film *Lead—the Enduring Metal*.

Special attention has been given to ventilation and passenger amenities in the Birmingham and Midland CM5 type coach for the Motorway Express between London and Birmingham. See page 13.

Normal user has been a principal topic at the Road Haulage Association congress. See page 12.

MIDLAND MOTORWAY INAUGURATION

The New M1 Comes into Service on November 2

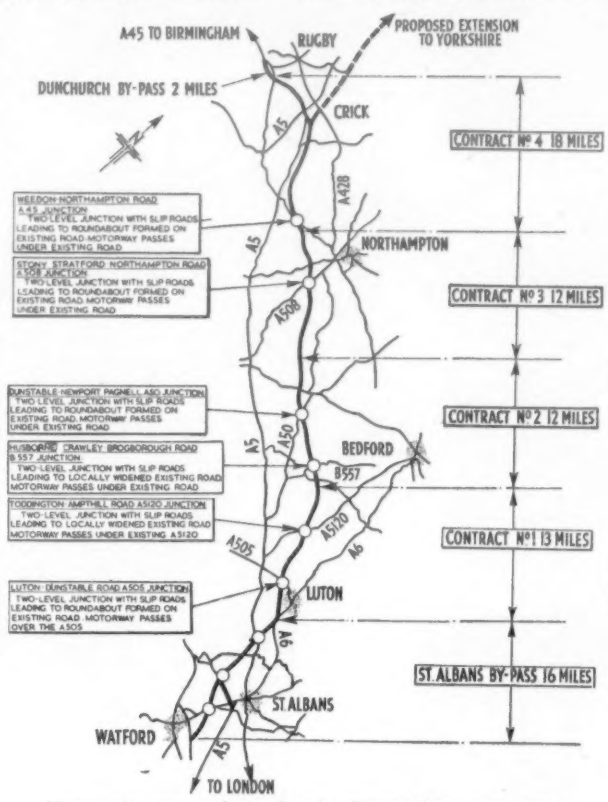
WORK CARRIED OUT IN RECORD TIME

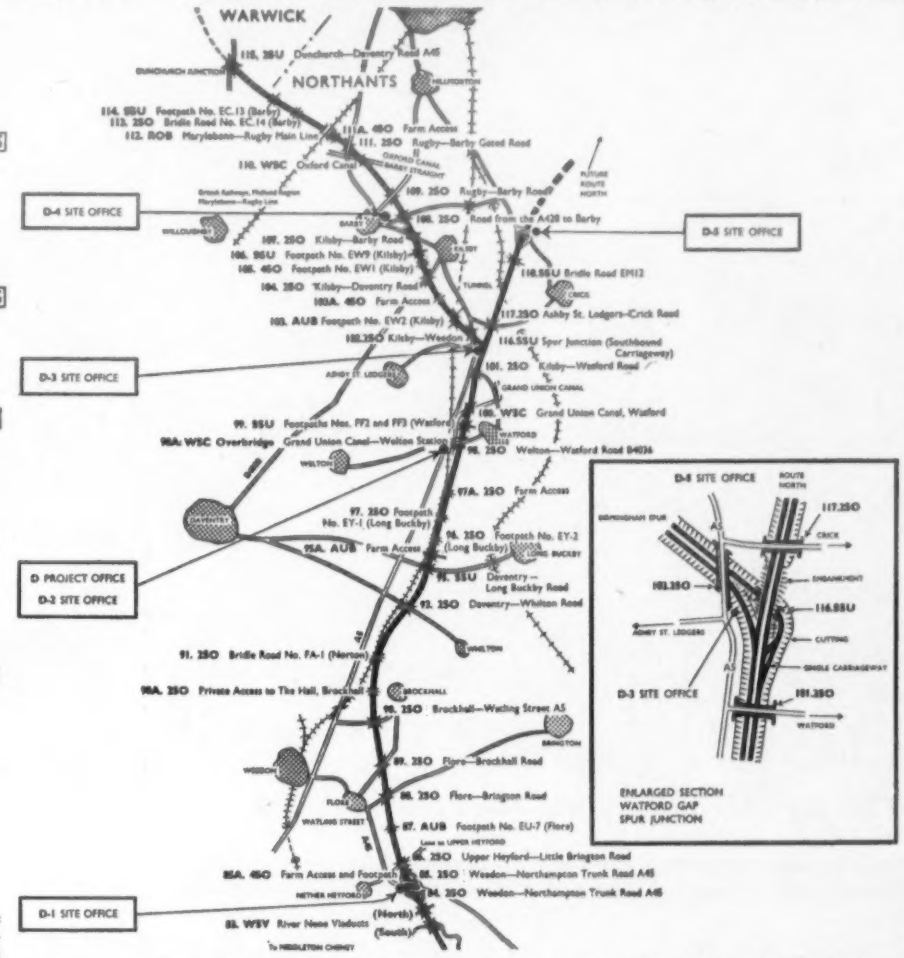
IN the past nineteen months there has been carried to completion one of the most remarkable civil engineering achievements ever carried out in this country—the construction of some 67 miles of special road comprising a substantial section of M1, the first British motorway other than the Preston Bypass. From the Watford Bypass (part of A41) and the North Orbital Road to Slip End, near Luton, where the modest opening ceremony will take place on November 2, the St. Albans Bypass has been constructed by Tarmac Civil Engineering, Limited. North of Slip End to Crick the new motorway forms part of the London to Yorkshire project, as yet not continued further, but from a point south of Crick, at Watford Gap, there is a spur in the direction of Birmingham which terminates in the Dunchurch bypass. The contractor for this work is John Laing and Son, Limited. There is now available a dual-carriageway road over the 100 miles from London to Birmingham.

The Laing contract comprised in all a dual-carriageway road approximately 55 miles in length, with a total of 132 bridges, stretching from south-west of Luton to south-west of Rugby. This project was the largest of its kind undertaken by one firm in this country and was divided operationally into four contracts totalling £16 million in value:

CA 12.5 miles Slip End—Ridgmont (Beds);
CB 11.9 miles Ridgmont—Gayhurst (Bucks);
CC 12.3 miles Gayhurst—Kislingbury (Northants); and
CD 17.7 miles Kislingbury — Dunchurch by-pass (including Crick extension) (Warwickshire).

The work has been carried out for the Ministry of Transport and the consulting engineers are Sir Owen Williams and Partners.


A45 TO BIRMINGHAM
RUGBY
PROPOSED EXTENSION TO YORKSHIRE
DUNCHURCH BY-PASS 2 MILES
CRICK
CONTRACT No 4 18 MILES
WEEDON-NORTHAMPTON ROAD A45 JUNCTION
TWO LEVEL JUNCTION WITH SLIP ROADS LEADING TO ROUNDABOUT FORMED ON EXISTING ROAD MOTORWAY PASSES UNDER EXISTING ROAD
NORTHAMPTON
CONTRACT No 3 12 MILES
STONY STRATFORD-NORTHAMPTON ROAD A508 JUNCTION
TWO LEVEL JUNCTION WITH SLIP ROADS LEADING TO ROUNDABOUT FORMED ON EXISTING ROAD MOTORWAY PASSES UNDER EXISTING ROAD
DUNSTABLE-NEWPORT PAGNELL A50 JUNCTION
TWO LEVEL JUNCTION WITH SLIP ROADS LEADING TO ROUNDABOUT FORMED ON EXISTING ROAD MOTORWAY PASSES UNDER EXISTING ROAD
HUSBORNE CRAWLEY-BROGBOROUGH ROAD B 557 JUNCTION
TWO-LEVEL JUNCTION WITH SLIP ROADS LEADING TO LOCALLY WIDENED EXISTING ROAD MOTORWAY PASSES UNDER EXISTING ROAD
BEDFORD
CONTRACT No 2 12 MILES
TODDINGTON-AMPTHILL ROAD A5120 JUNCTION
TWO-LEVEL JUNCTION WITH SLIP ROADS LEADING TO LOCALLY WIDENED EXISTING ROAD MOTORWAY PASSES UNDER EXISTING A5120
LUTON
CONTRACT No 1 13 MILES
LUTON-DUNSTABLE ROAD A505 JUNCTION
TWO-LEVEL JUNCTION WITH SLIP ROADS LEADING TO ROUNDABOUT FORMED ON EXISTING ROAD MOTORWAY PASSES OVER THE A505
ST. ALBANS
ST. ALBANS BY-PASS 16 MILES
WATFORD
TO LONDON



Above, the route of the London-Birmingham motorway, showing the St. Albans bypass at the London end and the Watford Gap—Crick section of the most northerly of the four contracts

One of the aluminium signs on the motorway at Collingtree, Northants

Included in the above summary are the four two-bridge two-level junctions and the two single-bridge two-level junctions.

Physical Features

The general gradient of the motorway will be less than 1 in 50. The only places where vehicles will be able to join or leave the motorway are at the six two-level junctions. Slip-roads from the motorway link up with the more important existing main roads, including A428 at Crick. It was planned to have service areas about every 12 miles, but so far this has not been implemented in full. These areas will be the only places where vehicles are allowed to pull off the motorway and stop, unless they break down, in which case they may be pushed on to the hard shoulder to await repair. Garages, parking areas, picnic sites, transport cafes, restaurants, telephones, and a footpath over the motorway are among the facilities which the service areas will provide. A special committee, appointed by the Ministry of Transport, and headed by the Hon. David Bowes-Lyon, is advising on tree planting and landscaping.

Formation

The formation width of 105 ft. includes an 8-ft. wide hardshoulder; a 36-ft. carriageway with a 1-ft. marginal haunch each side; a 13-ft. central reserve; and then a 36-ft. carriageway with a 1-ft. marginal haunch each side; and another 8-ft. wide hard-shoulder. The 36-ft. carriageways are reduced to 24-ft. for the Birmingham Spur from Watford Gap to the Dunchurch by-pass. The construction of the motorway is built up on a 6-in. deep granular sub-base; this is surmounted by 1 ft. 2 in. depth of dry lean rolled concrete. Then follows a 2½-in. asphalt base course, which is topped by a 1½-in. hot-rolled asphalt wearing course. Both asphalt courses comply with the requirements of British Standard 594 as follows:

(*a*) Hot rolled asphalt base course in accordance with BS594:1950; 70 per cent igneous or calcareous stone as Table II, Schedule 4, and binder as Table A, Col. 1; thickness 2½ in. on motorway.
(*b*) Hot rolled asphalt wearing course in accordance with BS594:1950; 55 per cent igneous stone as Tab'e 5, Schedule 1, and binder as Table 1, Column 3; compacted thickness 1½ in. on motorway.

In brief, the base course, as specified above, involves the use of asphaltic bitumen having a penetration of 40-60 at 25 deg. C. the finished mixture falling within the following tolerances:

	Per cent
Soluble bitumen	4.9— 5.9
Aggregate passing ¾-in. BS sieve ..	24.1—25.1
Stone	70+or −5

mentioned British Standard lays down that a mixture with 55 per cent coarse aggregate shall be:

	Per cent
Soluble bitumen	5.4— 6.3
Aggregate passing 200-mesh sieve ..	4.4— 6.4
Aggregate retained 200-mesh sieve but passing 7-mesh sieve ..	32.3—35.2
Stone, all passing ¾ in.	55+or −5

Asphalt Surface

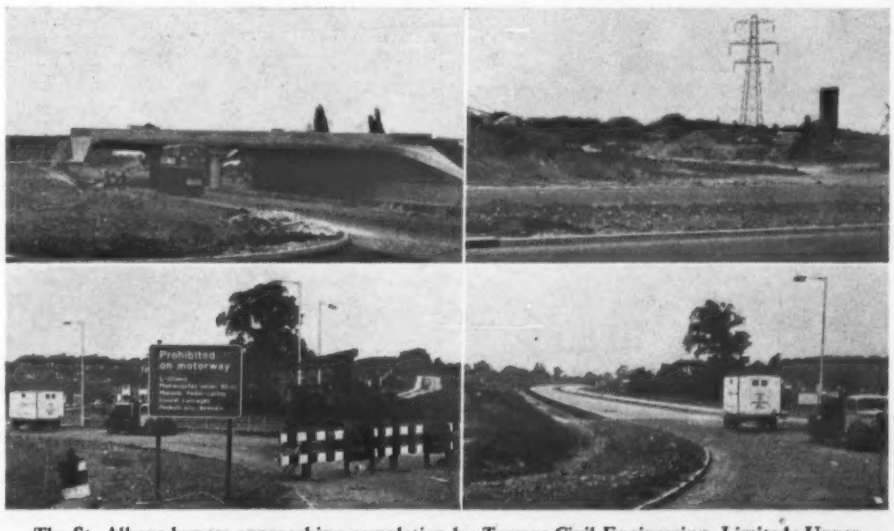
The above wearing surface is a typical British "asphaltic concrete." In essence it is a development of the original classic Clifford Richardson formula for rolled asphalt in that it consists of a relatively high percentage of coarse material the interstices of which are filled by a mortar of sand asphalt, the whole forming a dense mixture capable of withstanding the combined effects of heavy traffic and wide variations in climatic conditions.

This type of specification has been extensively used in Great Britain for many years for the surfacing of main roads and in recent years has become increasingly popular. It is particularly suitable for machine laying and thus can provide a running surface of good profile, whilst accumulated experience has shown that, in addition to its durability, it is capable (provided that the correct aggregates and asphalt cement are employed) of providing a rugous non-skid surface. It has been shown as a result of practical experiments and experience that with this class of mixture the use of a Trinidad lake asphalt cement is a vital factor in ensuring that, under concentrated traffic, the running surface retains a sandpaper non-skid texture.

The 18-in. concrete marginal haunches have a white finish at wearing course level, and the hard shoulders will have a 15-in. granular sub-base, 4½-in. granular base, finishing with a 4½ in. topping course.

There will be 132 bridges in the 55-mile section. They are built of reinforced concrete with precast beams only on railway underbridges. Railway overbridges will have steel superstructures. The bridges are divided as follows:

Two-span overbridges	59
Four-span overbridges	19
Single-span underbridges ..	29
Arch underbridges	7



The St. Albans bypass approaching completion by Tarmac Civil Engineering, Limited: Upper views, the crossing of the Watford—St. Albans road north of Garston, and, below, the junction of the spur road with the North Orbital south of St. Albans

Organisation

The organisation of work over a site 55 miles long and less than 200 ft. wide presented some singular difficulties which were overcome by John Laing and Son, Limited, by good organisation. There were 23 site offices in all. Besides the headquarters office at Newport Pagnell, there were four project head offices, 13 sub-project offices, a headquarters office for Sir Owen Williams and Partners and four project offices for the consulting engineers. These offices, which together equalled 45 houses all equipped with electricity, water, telephone and drainage, were ready within three weeks of the award of the contract.

Staff for the motorway contract was drawn mainly from other projects all over Britain and

On the London—Birmingham motorway: The two-level junction with A508, Stony Stratford—Northampton road, at Collingtree; the Ouse viaduct and the flood-relief channels under construction; and, right, the two-level junction with A50 Dunstable—Newport Pagnell at Broughton in Buckinghamshire

The asphalt wearing course is based on an asphalt cement composed of equal parts, by weight, of asphaltic bitumen and refined Trinidad lake asphalt, the asphalt cement, as in the case of the base course, having a penetration of 40-60 at 25 deg. C. Table 5, Schedule 1, of the above-

Railway underbridges	5
Railway overbridges	3
Two-span underbridges ..	1
Canal bridges	4
Wall and slab-type viaducts ..	2 (Rivers Lovat and Nene)
Arch-type viaduct	2 (Great Ouse)
Wall and slab minor stream bridge	1

housing and caravan accommodation had to be arranged. The labour force reached 4,700 men and was maintained until all the earthworks and bridge-works had been virtually completed, by the end of last year. Hostel accommodation was arranged,

(*Continued on page* 13)

MAKE LIGHT WORK OF YOUR HEAVY LOADS

SAVES MONEY

SAVES DRIVER FATIGUE

SAVES IDLING TIME

The Commer tractor is powered by the amazingly economical Rootes 105 b.h.p. diesel—a silent, powerful and reliable engine that is very easily maintained. Longer life, due to the advanced but simple design, means more "on-the-road" hours between major overhauls.

The new all-steel three-seater cab is spacious, comfortable and quiet. Special insulation damps 'underfloor' engine noise, at the same time keeping the interior fresh and cool, and reducing driving fatigue to a minimum.

Quickly detachable trailers obviate costly 'standstill' time—the tractor can be constantly employed while trailers are being loaded or unloaded.

COMMER 10-11 and 12 TON TRACTOR-TRAILERS

with ROOTES DIESEL POWER ensures maximum m.p.g.

ROOTES PRODUCTS — BUILT STRONGER TO LAST LONGER!

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THE MORE YOU NEED

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GIANT TYRES

The heavier the load the greater the stress on the tyres. For complete reliability, very long mileage and maximum safety choose from the Dunlop range of Giants. There is a tyre for the heaviest load, a tyre for the roughest roads. In fact, a tyre individually built to suit *your* needs.

cmt/srs/404

LORRY—BUS—COACH

No Immediate Gains from Motorway

HAULIERS in general anticipate that their drivers will use the London—Birmingham motorway when it is officially opened on November 2, but they do not expect to secure any immediate monetary savings or even vehicle economy from it. This is the general feeling gained after inquiries among a number of prominent operators. A director of a large group of companies, including three or four running to the Midlands and the North-West, said they already have agreements in individual companies of the group for schedules based on the 30-m.p.h. maximum and did not anticipate any further developments at the moment. They would have to secure that present vehicles were operated in a manner suited to their capabilities; engine power and brakes (which he thought were not up to Continental standards) would have to come under review.

Mr. W. C. Dale, commercial transport manager of Reed Transport, Limited, which has vehicles running to Manchester, said his company definitely intended to authorise use of the motorway. It had earlier concluded an agreement for scheduled speeds of just over 23 m.p.h. for heavy vehicles but, again, no further re-scheduling of journeys was foreseen. As to vehicle performance it already had Foden eight-wheelers capable of 53-54 m.p.h., but he expected that a proportion of high-speed vehicles would in due course be added to the fleet with the motorways in mind. It might, however, be necessary to impose a speed limit on drivers in the light of experience. Mr. R. J. Elmes, general manager of Silver Roadways, Limited, said his company, too, had recently reached agreement of re-scheduling, 22 m.p.h. being the basis. He expected that his drivers would use the motorway and he would be prepared to pay for the old journey time at the higher average speed that would now be possible. The only comment from British Road Services headquarters was that no specific instructions had been issued to drivers from that point. Routing was in the hands of local management and if the motorway was a more suitable route it would presumably be used. The 20 vehicles operated by James Holden Junior (Crumpsall), Limited, and associated companies will be allowed on the motorway on the Manchester—London trunk service and there will be no alteration to schedules for payment purposes i.e., eleven hours will be paid. However, Mr. Holden intends to meet the representative of the drivers after a month's experience to discuss the effects it has on the services.

Bedford diesel buses with Dennis-built 31-seat bodies have recently been added to the school service of the London County Council; right, Daimler Freeline 41-seat coach with Plaxton bodywork operated by Burwell and District Motor Services, near Cambridge. The vehicle has the Daimler 10.6-litre engine

Striking the Right Note

ICE cream retailers were recently advised by Mr. C. T. Heinlein, described as an expert on the manufacture of instruments giving musical chimes, to have their own chimes composed to avoid making annual payments to the Performing Rights Society. He was speaking at the Ice Cream Alliance conference at Buxton.

One-Man Bus Trouble

NEGOTIATIONS are being sought by West Bridgford Urban District Council, with the Transport and General Workers Union over pay arrangements for the drivers of one-man buses. Three months ago it was decided to hire a bus for trials by the transport department, but an application was halted because of the union move to secure a higher wage for the driver.

Revenue from Extended Tours

THERE are 12 million fewer passengers on Lincolnshire Road Car stage services compared with six years ago and the number is still falling, it was stated by Mr. H. J. Downs, the traffic manager, at Lincoln, when application was made to the East Midland area Traffic Commissioners to vary its licence by the addition of four extended tours from 10 places. In reply to a question Mr. Downs agreed that a primary reason for the applications was to subsidise stage carriage services.

South Shields Trolleybuses to Stay

RECOMMENDATIONS by South Shields transport manager (Mr. J. Crawford) that the town's trolleybus service should be gradually replaced with buses, has been deferred for two years by South Shields Transport Committee. The transport manager made his recommendation after stating that bus services were more easily extended to new housing estates, and there was difficulty in getting replacements of trolleybus overhead equipment. Some members of the committee expressed the view that trolleybuses had a longer life than buses, and as they used electricity, they were not dependent upon imported fuel.

Apartheid for Cape Haulage

JOB reservation, if applied to heavy-duty vehicle driving in the Cape Province of South Africa, would have serious repercussions on long-distance haulage operation from Cape Town, say transport firms. The Minister of Labour had said in Pretoria that job reservation would be applied to motor transport with the object of reserving the driving of heavy vehicles for Europeans. Preliminary inquiries suggest that the application of job reservation to heavy-duty vehicle drivers could have serious repercussions in the Cape. The director of a major transport and furniture removal concern in Cape Town has said that almost 100 per cent of its drivers are coloured men. No differentiation is made in wages. The Minister of Labour has indicated that non-Europeans did not have the necessary sense of responsibility or quick reactions and that this made them a hazard when they drove heavy vehicles, but it is insisted that in the Western Cape there has been little trouble with non-European drivers on this account and the same is said of the Cape Peninsula area.

London Garages for Disposal

TEN London Transport bus or trolleybus garages are at present being offered for disposal as surplus to requirements, although in one case only part of the premises is available on lease. Putney Bridge and Old Kent Road bus garages and Ilford and Lea Bridge trolleybus depots are on the market already; recently it was announced that the old Hatfield and Stevenage (Fishers Green Road) County area garages are for disposal and that Clay Hall (Old Ford) Central bus garage, due to close on November 11 and Forest Gate are on the market, while part of the new Loughton garage is available, due to a drop in traffic requirements. Clay Hall and Forest Gate arise out of the trolleybus replacement scheme; Clay Hall buses will go mainly to Bow and when Forest Gate closes, probably in the first half of 1960, its buses will be redistributed to Poplar and West Ham trolleybus garages. For a time buses and trolleybuses will be operated from the same garage.

Portsmouth Incentive Scheme

FEARFUL of its effects on labour relationships, at present described as first class, Portsmouth Corporation Passenger Transport Committee has decided not to recommend acceptance of the consultants' proposals for a detailed work study programme and the introduction of an incentive bonus scheme for bus maintenance workers. Harold Whitehead and Partners, Limited, the consultants, had estimated that a saving of about £25,000 a year could be effected by the introduction of measures suggested by them.

In discussions with the management, it is stated to have been ascertained that the scheme would increase the pay packets of only 40 men and thus 75 per cent of the employees would not reap any benefits, although they would have to play a large part in securing the benefit for the other 25 per cent, it is claimed. In any event, the commercial officer of the undertaking considered that £12,000 and not £25,000 would be the likely saving.

No Rebate for Tunnel Users

THE Mersey Tunnel Joint Committee has declined the application of the road transport section of Liverpool Chamber of Commerce for a rebate to be given to those road hauliers and C-licence operators who paid daily dues on a monthly account basis. At the meeting of the section it was pointed out that the tunnel was originally constructed for commercial use and that private car contract ticket holders received a substantial rebate each month. For these reasons the section felt a concession should be made to commercial users.

Accelerated Services Urged

SPEAKING at a presentation of safety awards to the firm's drivers, Mr. L. Graham, general manager, Venture Transport Co., Limited, Consett, said the firm's bus services in North-West Durham were far too slow and should be speeded up. He instanced the Consett—Newcastle upon Tyne service, which took 64 minutes to cover 16½ miles. This sort of thing would not help the firm to keep its passengers, he stated. Mr. Graham added that during the past eight years, Venture had lost 4 million passengers and increased efficiency was needed to arrest this decline.

Webbing Load Nets

NETS suitable for securing loads on vehicles recently developed by Thomas French and Sons, Limited, Manchester, are built up from woven nylon webbing slotted at intervals to permit the interposition of transverse lengths of webbing of similar construction. The slots are integrally woven into the webbing in such a manner that there is no reduction of strength in their area, and nets built up from this form of webbing display none of the weaknesses of plain cross-over tape nets. The main characteristics of these nets are strength and lightness, immunity to rotting and the action of sea water, high abrasion resistance and compactness for storage. Developed primarily for use by the services to extremely stringent specifications, they are nevertheless adaptable to a wide variety of civil and industrial usages. The three standard sizes, 8 ft. by 8 ft., 12 ft. by 12 ft. and 14 ft. by 14 ft., weighing respectively 17 lb., 26 lb. and 28½ lb., will meet many uses, but the construction of the slotted tape lends itself to the making of special purpose nets of many sizes and shapes.

Bus and Coach Developments

A. Plaskitt and M. W. Smaller, Barton-on-Humber, apply for the licences of T. Troop.

M. Barnes and Son, Haslingden, applies for licences held by G. H. Hoyle and Sons, Limited.

Bermuda Motor Services, Limited, Nuneaton, seeks the licences of F. and W. S. Harrison trading as Bermuda Motor Services.

Newton and Mackay, Ullapool, applies for the excursions and tours from Ullapool of G. and A. Ross.

Nottingham Corporation proposes a new weekday service between Trinity Square and Bestwood Estate (Belsay Road) via Mansfield Road, Arnold Road, Hartcroft Road and Beckhampton Road.

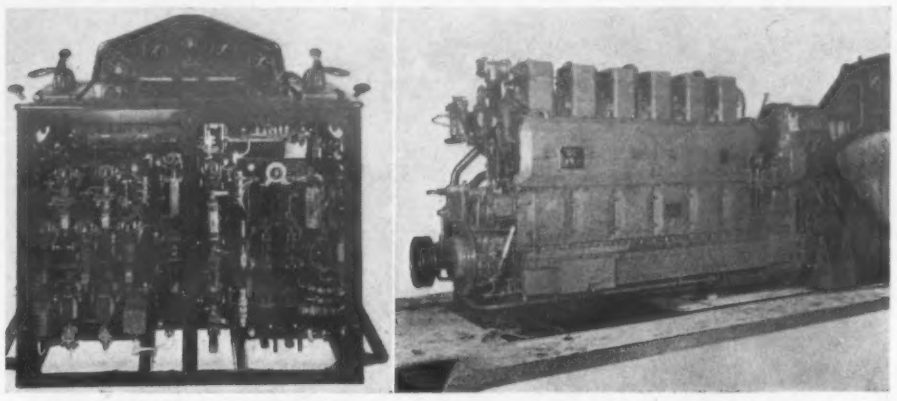
HUDSWELL-BRUSH DIESEL ELECTRIC LOCOMOTIVES

For Manchester Ship Canal Company

2—POWER UNIT AND EQUIPMENT*

THE electrical schemes and the control equipments for the 0-6-0 Hudswell-Brush diesel-electric locomotives built for the Manchester Ship Canal Company are quite conventional. The two traction motors are connected in permanent parallel across the main generator; the auxiliary generator supplies current, maintained at a constant voltage by an automatic voltage regulator, for battery charging, auxiliary machines and excitation of the main generator. Engine starting is achieved by motoring the main generator from the battery.

The control cubicle, which is surrounded by an instrument panel, is fitted against the front wall of the cab and contains all items of control with the exception of the resistance unit, which is mounted at the rear of the cab. The driver's controls comprise controller, reverser, air brake handle and main switch; the first three, being duplicated on both sides of the cab, are grouped conveniently on the top of the cubicle. Sanding buttons and deadman pedals are also located for comfortable operation. The controller, reverser and main switch handles are interconnected by a robust mechanical interlock to prevent maloperation. Dust tight, hinged, lift-off doors on the sides and top of the cubicle allow access to the contactors and relays; maintenance is further simplified by making all units easily removable from the front.



The control cubicle surmounted by the driver's controls with the doors removed; right, the National R4AA6 engine installed in the Hudswell-Brush locomotive

Simple Operation

The driver exercises control over power output by rotating the controller handle. The initial movement of this handle progressively increases the excitation on the main generator by cutting out stages of separate field resistance whilst maintaining the diesel engine speed at a minimum. When maximum excitation has been reached this is maintained and further rotation of the controller handle increases the engine speed by means of a direct mechanical linkage to the governor.

Apart from the mechanical interlock unit linking the operating handles, other safety devices include overspeed and low lubricating oil pressure trips on the engine, a switch to ensure that no power can be applied until sufficient air is available for efficient braking, electrical overload relays to protect the generator, blower relay to ensure that no power can be applied to the traction motors in the event of a failure of the blower and an electrical interlock to ensure that power is removed should the brakes be applied with the controller in an advanced position.

Diesel Engine

The engine is a National R4AA6 normally aspirated vertical four-stroke model, having a continuous rating at n.t.p. of 400 b.h.p. at 750 r.p.m. and a two-hour rating at n.t.p. of 440 b.h.p. at 750 r.p.m. Cylinder dimensions are 9-in. bore by 12-in. stroke. The cylinder housing is constructed of cast iron and large inspection covers give good access to the main bearings, big-end bearings, camshaft, fuel pumps and push rods. Cylinder liners are of the wet type, i.e. in direct contact with the cooling water. They are made of close-grained cast-iron chromium hardened and honed internally to the finished diameter.

The bedplate is a one-piece casting in Meehanite, capable of withstanding the buffing shocks imposed during shunting operations. It incorporates the bottom half of the generator mounting flange and the front power unit support. Bolted to the underside is the lubricating oil sump, which is fashioned so as to prevent trouble from oil surging. The power unit is supported on the locomotive deck by three resilient mountings, one at the forward end of the engine and the other two on the main generator carcase. This form of mounting is considered ideal because no frame or deck distortion can be transmitted to the diesel power unit. There is no metallic contact between the power unit and the deck; rebound springs are fitted and any movement of the power unit is restrained by rubber end stops fitted on the two generator mounting feet.

Bearings and Crankshaft

The engine main bearings are of the loose shell type, white-metal lined and are similar for all the journals with the exception of the flywheel end journal, the one for which is designed to form a location bearing. The crankshaft is bolted directly to the armature hub of the main generator. The flywheel end of the bedplate and column housing is rigidly bolted to the engine, the complete close-coupled engine and generator set being three-point supported.

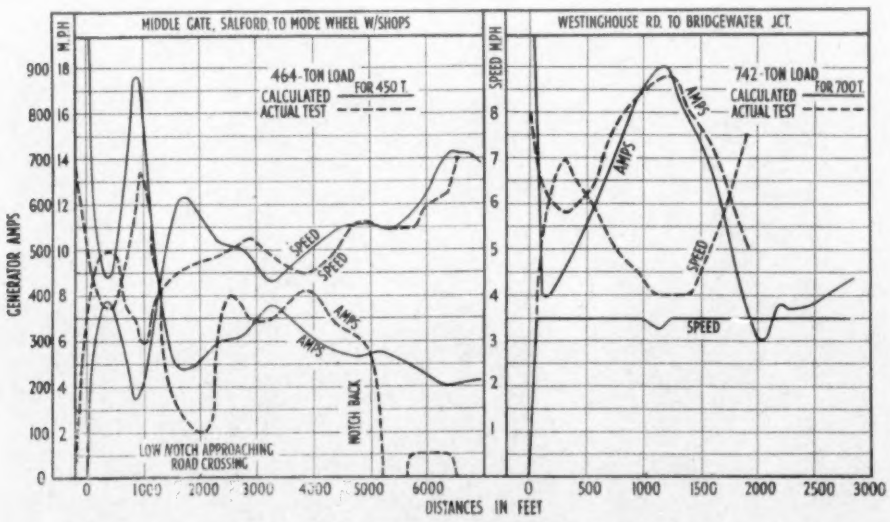
The valve operating gear is enclosed by the cylinder head covers. These are so designed that the atomisers are outside, thus preventing any contamination of the lubricating oil and permitting their easy removal. The timing wheels are at the flywheel end of the engine and are protected by a

(*Continued on page* 6)

M.S.C. Nos. 4001-4002 DATA AT GLANCE

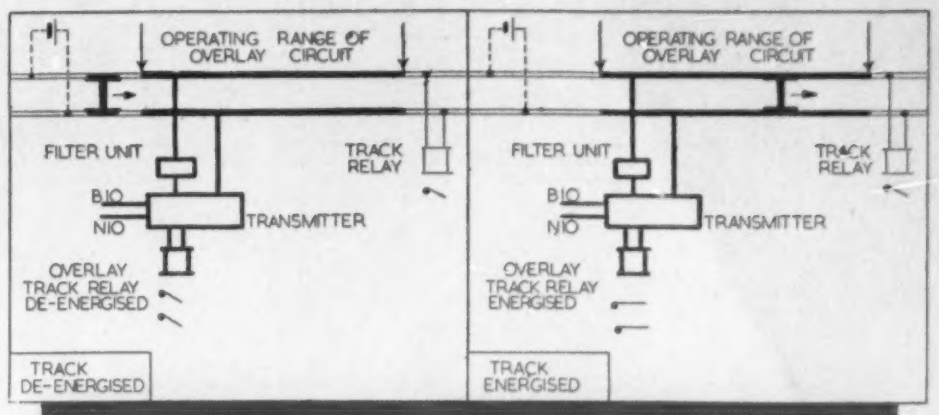
LOCOMOTIVE	
Wheel arrangement	0-6-0
Length over buffer beams	27 ft. 5½ in.
Weight in working order	51 tons 1 cwt.
Maximum tractive effort	34,000 lb.
1-hour tractive effort	16,300 lb.
Maximum speed	18 m.p.h.
Wheel diameter	4 ft. 6 in.
Wheelbase	11 ft. 6 in.
Maximum height	12 ft. 8 in.
Maximum width	8 ft. 8 in.
DIESEL ENGINE	
Maker	National Gas and Oil Engine Co., Limited
Type	R4AA6, vertical four stroke, normally aspirated
Rated output	440 b.h.p. at 750 r.p.m., 2 hour; 400 b.h.p. at 750 r.p.m., continuous
Number and size of cylinders	Six; 9-in. bore, 12-in. stroke
MAIN GENERATOR	
Maker	Brush Electrical Engineering Co., Limited
Type	Self-ventilated compound wound
1-hour rating	249 kW, 429 volts, 580 amps, 750 r.p.m.
Maximum current	1,000 amps
AUXILIARY GENERATOR	
Continuous rating	10 kW, 90 volts, 111 amps, 820 to 1,760 r.p.m.

TRACTION MOTORS	
Maker	Brush Electrical Engineering Co., Limited
Type	Series wound
Number	Two
1-hour rating	150 h.p., 429 volts, 290 amps, 873 r.p.m.
Ventilation	Force-ventilated
Suspension	Axle-hung, nose-suspended
AUXILIARIES	
Compressor	
Maker	Westinghouse Brake and Signal Co., Limited
Type	D.H.16
Rating	3 kW 90 volts, 217 r.p.m. at 100 lb. sq. in.
Blower Motor	
Maker	Electrical Power Engineering Co., Limited
Type	Self-ventilated, series-wound
Rating	4·25 h.p., 90 volts, 2,130 r.p.m.
Battery	
Maker	The D.P. Battery Co., Limited
Type	40 cell, RSKA92
Capacity	92 A.H. at 5-hour rate
A.V.R.	
Maker	Newton Bros., Limited, Derby
Type	4S



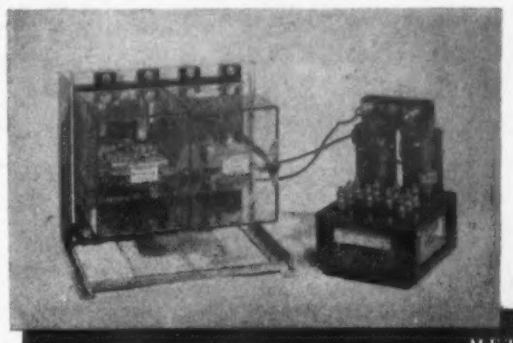
Performance curves for test runs carried out on the Manchester Ship Canal railways

* No. 1 appeared October 24.



MV-GRS OVERLAY TRACK CIRCUIT

This track circuit is superimposed on an ordinary track circuit providing a short, independent track for special purposes such as level crossing warning circuits, call on signal release, etc. By the use of electronically generated 10 k-c energy it does not interfere with the working of the ordinary track circuit and no insulated rail joints are required. Only two connections to the rails are necessary. The circuit is completed by the train, the pick up range being between 80 to 120 feet.



The overlay track circuit operates from a 9–12-v battery which can be arranged for low rate charge from an AC supply.

Overlay track circuit equipment

METROPOLITAN-VICKERS-GRS LTD
132-135 LONG ACRE · LONDON WC2 · TEMPLE BAR 3444
An A.E.I. Company
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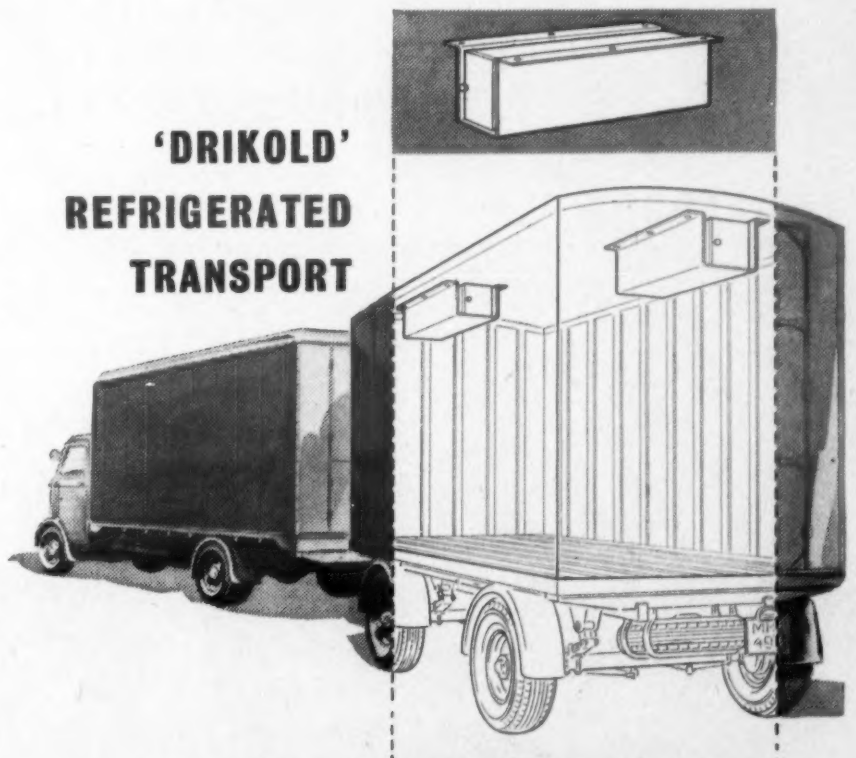
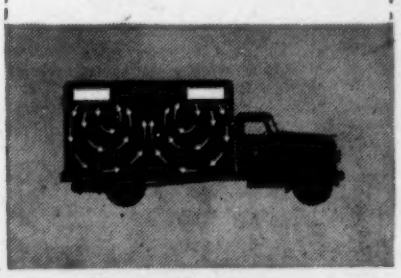
MV-GRS LEADING SIGNALLING PROGRESS

K5/801

'DRIKOLD' REFRIGERATED TRANSPORT



The 'Drikold' system of refrigeration is simple and inexpensive, hygienic and easy to use, has no moving parts to go wrong, needs no skilled maintenance, and takes up the minimum of space.



If you're building or buying a refrigerated vehicle, consider 'Drikold' first.

'Drikold' is solid carbon dioxide. It evaporates slowly, without melting, leaving no residue.

Full information on request:

IMPERIAL CHEMICAL INDUSTRIES LTD., LONDON, S.W.1

DK. 302

Manchester Docks Locomotives

(*Continued from page 5*)

cover—no adjustment is necessary. Each pair of valves is operated by a cross beam which is provided with its own plunger and guide, thus relieving the valve spindles of all side thrust. The valve spindles are made of heat-resisting steel and double springs are used for each valve. The camshaft is fitted with hardened steel cams and is gear-driven from the crankshaft.

The pistons are of aluminium alloy; each piston is fitted with four pressure rings and two scraper rings of the slotted type and one of the chamfered type. Small drain holes are drilled in the pistons just below the scraper rings, serving to drain off the surplus lubricating oil from the cylinder walls. The gudgeon pins are fully floating and are retained in position by circlips. Connecting rods are manufactured of H-section stampings of alloy steel, drilled the full length of the rod for lubricating the gudgeon pin bearing under pressure. The latter is fitted with a phosphor-bronze bush. A Woodward governor is fitted on the engine and is driven through gears from the camshaft gearwheel at the flywheel end of the engine. It is easily removable from the engine so that at overhaul periods any attention may be carried out at the bench.

Individual fuel pumps are fitted in their own separate chamber, thus ensuring that there is no contamination of the lubrication oil by fuel oil. Fuel oil from the main feed tank is drawn up through a check valve to a rotoplunge gear-type fuel oil transfer pump driven from the engine camshaft. The fuel pressure at the fuel pumps is controlled at approximately 5 lb. per sq. in. by means of an orifice plate and excess fuel is returned to the main tank. A filter is fitted in the line before the separate fuel pumps.

Lubricating oil is delivered under pressure to all working parts of the engine by a positive geared pump. Oil is delivered direct from the pump to a filter which embodies three filter cartridges. From the filter the oil is pumped to the radiator and back to the main connection on the column at the free end of the engine. Branches are taken on to all crankshaft main bearings, the camshaft bearings, and a number of auxiliary units.

A 464-ton trailing load was made up for an acceptance test run between Mode Wheel Workshops and Middle Gate Salford and return, this being the route which included the New Barns gradient of 1 in 40. The recorded test figures during this run agreed very closely with the calculated curves until the driver notched back at the approach to a road crossing. The load was satisfactorily handled down the 1 in 40 gradient and the locomotive was brought to a halt at the bottom with most of the train standing on the incline. Tests carried out on the return journey, i.e. from Middle Gate Salford to Mode Wheel, included successful starts on the 1 in 40 gradient, in the first place with 83 per cent of the train on the grade and secondly with 94½ per cent of the train on the grade. On a through run up the grade the minimum speed recorded was 6 m.p.h. All tests at 450 tons were completely satisfactory and showed a slight margin in hand on speed and generator current.

Loads of 700 Tons on Test

For the second series of tests, a trailing load of 742 tons was available at Weaste for transport to Bridgewater Junction via Mode Wheel, Middle Gate Salford and Westinghouse Road and although this load was 42 tons in excess of the specified requirements, the test run was completed satisfactorily, again with a slight margin in hand on speed and generator current. The test figures recorded over the Westinghouse Road—Bridgewater Junction section of track are not strictly comparable with the calculated performance as allowances were made in the calculations for the extremely congested nature of Trafford Park with its numerous road crossings and a speed limit of 3½ m.p.h. was imposed. It was possible, however, during the test run to exceed this 3½ m.p.h. and therefore the test load was taken under more normal conditions. From this particular run the specified requirements of 700 tons at 8 m.p.h. on the level and starting 700 tons on 1 in 100 were well accomplished.

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GARSTON Modern electric cranes for quick discharge of sawn timber, pitprops and all bulk cargoes: also equipped for coal handling: extensive open and covered accommodation.
Enquiries to: Docks Manager, Garston Docks, Liverpool 19. *Telegrams: Dainwex, Liverpool (Garston Docks). Telephone: Garston* 765.

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BRITISH TRANSPORT DOCKS

THE DUPLE SHOW

Exhibition of Vehicles at Hendon

OPENING the fifth exhibition of coachwork held at the Hendon works of Duple Motor Bodies, Limited, Mr. Charles Ian Orr-Ewing, M.P. for Hendon and Civil Lord of the Admiralty, remarked on the strengthening of the Duple group by the acquisition of the Willowbrook business at Loughborough. The Duple range now provided a bus or coach for every taste with the addition of double-deckers and a strong municipal connection. He congratulated the motor industry in general on its valuable work for the country and Duple in particular in providing such a show in the alternate years between Commercial Motor Shows at Earls Court.

Exhibits

The exhibition comprised 16 coaches under cover, accessories such as radio, some chassis and a number of demonstration coaches. The 1960 model 41-seat Super Vega on a Bedford SB1 diesel chassis gave a preview of a Kelvin Hall model, as it is destined for the Scottish Motor Exhibition next month. This latest production incorporates a number of improvements, including the divided squab. Continental-type seating, with double-density cushions, as standard. There are fibre mats at the entrance, two re-circulator heaters, radio and speech amplification, Formica interior side lining panels and anodised ventilated wheel discs, etc. The Super Vista was represented by a 29-seat 8-ft. wide body, on the Bedford C4.Z2 petrol-engined chassis. This again was to the 1960 specification, generally similar to the Super Vega. The vehicle exhibited had formed translucent plastics to roof quarters, with tubular mesh base interior racks to headrail, two re-circulator type heaters, and ventilated anodised discs to the wheels.

The Duple 8-ft. 41-seat Corinthian body was shown on a Commer Avenger diesel-engined chassis. The vehicle had toughened safety glass to the roof quarters, with tubular mesh base headrail racks, width marker lamps, two re-circulator type heaters, and the Continental type seating which is now standard. An 8-ft. luxury coach, also of 41-seat capacity, was the Britannia central-entrance body on A.E.C. Reliance chassis. A front-entrance Britannia was carried on a Leyland Tiger Cub chassis and had a 43-seat layout.

A Travelled Ford Thames

The Yeoman luxury coach body on a Ford Thames diesel-engined chassis was to an overall width of 8 ft. with seating for 41 passengers. This unit has toughened safety glass to roof quarters, tubular mesh base interior headrail racks, recessed fibre mat to entrance, width marker lamps to roof quarters, wide "K" type exterior moulding scheme, and polished, anodised discs to front and rear wheels.

A mud-covered luxury coach is unusual at any time but especially in a show of this character. It was, of course, a 1959 production, and was in fact the Ford Thames coach which recently completed the record trip from London to Moscow. This coach has already been described in our columns.

Among the company's Midland-produced vehicles was a 15-seat all-metal Service coach body, on modified Bedford J.2 petrol-engined chassis, to a 7 ft. 6 in. overall width. This is a development from the J.2. service bus originally designed for export, which has now been adapted for the domestic market. The coach exhibited had Duple standard continental type seating for 15 passengers, private locking to entrance and emergency doors, 43 cu. ft. capacity rear locker, re-circulator type heater and tubular mesh base interior headrail racks. The service bus body, 8 ft. wide and mounted on the Bedford C5Z1 diesel-engined chassis, modified by Duple to comply with M.o.T. Regulations, was a standard production, with seating for 30 passengers, demisters to front windscreens, trafficators to front and rear, paint-finished bumpers to front, standard service type seating, trimmed moquette and p.v.c.

A metal service bus body was shown on the Bedford SB.8 diesel-engined chassis; in this case seating for 40 passengers was provided. The seat type was G.A.200, trimmed in moquette with chrome reliefs. The popular Donington metal luxury coach was represented on an A.E.C. Reliance chassis. It was an 8 ft. wide 41-seater and the specification included interior joinery in walnut. Finally, there was an 8-ft. 42-seat service bus body mounted on the Ford Thames diesel-engined chassis. This exhibit was to a basic standard specification without extras.

Duple-Bedford Super Vega coach at Hendon this week and to be seen at Kelvin Hall

Willowbrook Bodywork

A metal-framed normal height double-deck 63-seat bus was prominent among Willowbrook products. It was on an A.E.C. Regent chassis, to the specification of City of Oxford Motor Services, Limited. The special features of this vehicle are the front entrance on an orthodox chassis with easier entry; new ram jet heating, with units installed in the front bulkhead over the driver's windscreen; the momentum of the vehicle forces the heated air into the saloons. Willowbrook showed a 7 ft. 6 in. Albion Nimbus bus, with seating for 31 passengers. This was a metal-constructed body designed for "Pay as you enter" and included electrically-controlled glider type doors, enclosed driver with half door to near-side, rear baggage locker, tubular mesh base interior racks, parcel shelf behind driver and reversing light.

The Willowbrook express service coach on the A.E.C. Reliance chassis, seating 43, was a scientifically constructed metal frame coach with exceptionally low overall weight. The seating was lightweight tubular express type by the Willowbrook factory, and the specification included interior baggage racks, heaters and demisters, large rear baggage locker, air-operated glider type entrance door, double panel top sliding windows, first-aid outfit, rubber mud flaps and an emergency door buzzer. A 45-seat metal-framed service bus body on a Leyland Tiger Cub was also on view.

Carmen's Company Ceremony

ON October 21 the Worshipful Company of Carmen exerted its right to ply for hire from a licensed stand in the City of London, when the traditional Hiring of Carts ceremony was conducted outside Tallow Chandlers Hall, E.C.4.

The ceremony was of course, symbolic, but nevertheless the right to do this dates from before the thirteenth century. In those days all stands or "carre-rooms" were in the ownership of, and operated by, the Guild and Fraternity of Carmen and even today the ancient privilege of hiring a cart in the City of London belongs only to Freemen of the Carmen's Company.

Following the Hiring of Carts Ceremony, members of the Livery, headed by the newly installed Master (Colonel J. F. E. Pye, M.Inst.T., F.I.A.C.) and the Senior Warden (Mr. Raymond Birch, M.I.Mech.E., M.Inst.T.) and the Junior Warden (Mr. H. H. Crow, M.Inst.T.) walked in procession through the City to St. Stephen's, Walbrook, the Mother Church of the Carmen's Company. The address was given by the Rev. W. H. Dormor, Honorary Chaplain. The subsequent luncheon was presided over by the Master. The toast to the Company was proposed by Mr. E. G. Whitaker, M.Inst.T., transport adviser to Unilever, Limited, the reply being by the Master. Mr. Raymond Birch proposed the guests, for whom Mr. Ted Leather, M.P. for Somerset North, made the response.

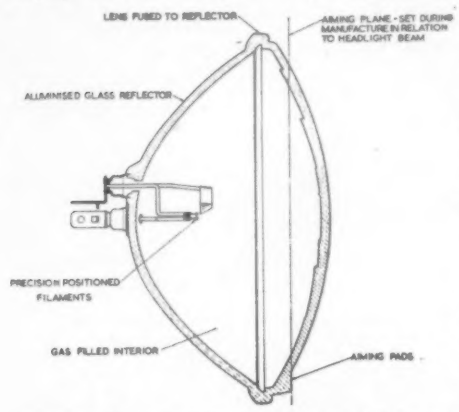
A background of contrasts on the installation day of the Worshipful Company of Carmen. From the left, Messrs. O. G. Sutherland (clerk to the company), the Beadle, Raymond W. Birch (senior warden), Colonel J. F. E. Pye (master) and H. H. Crow (junior warden)

MOTOR SHOW TRENDS

Possibilities of New Components

LONDON Motor Show time invariably produces a crop of headlines and comment in the popular Press that seek to sum up the whole of a year's progress in a few short phrases. This year is no exception but whereas for several years comment in this medium has tended to deplore a general lack of progress by the British industry towards that higher plane of technical achievement reached by its Continental competitors (or so we have been urged to believe), this year, for some reason, even the harshest of the erstwhile critics are apparently appeased and opinion is virtually unanimous in approval of the current products.

Although the exhibition now mounted at Earls Court is not of direct concern to operators and users of commercial vehicles, nor to ourselves as a commercial transport newspaper, an examination of the vehicles, components and equipment on display there well repays the effort expended by


LENS FUSED TO REFLECTOR
ALUMINISED GLASS REFLECTOR
AIMING PLANE - SET DURING MANUFACTURE IN RELATION TO HEADLIGHT BEAM
PRECISION POSITIONED FILAMENTS
GAS FILLED INTERIOR
AIMING PADS

Drawing shows arrangement of latest in Lucas vehicle lamps—an all-glass Sealed Beam unit without separate bulbs

a useful gain in general understanding of the progress of the motor industry as a whole. For while there are still wide differences between the design of motor cars and the heavy classes of commercial vehicle, and in the respective production practices, these differences have been narrowed considerably during the remarkable postwar growth of the industry and designs and techniques developed by the motor-car manufacturers have enabled them to compete ever more effectively in the light and medium capacity commercial vehicle field, both at home and overseas.

Practically all vans and lorries of up to about 4 tons capacity, a very large proportion of goods vehicles in the 7-ton class and a substantial number of buses and coaches used for private hire and touring are now produced by the large motor-car manufacturers rather than the traditional commercial-vehicle builders. Inevitably, some aspects of design and practice in private-car production will be reflected more strongly in the field of commercial vehicles than was once the case. Moreover, greater recourse to the use of proprietary components even by the traditional heavy-vehicle manufacturers, in the interest of the greater efficiency and lower cost possible with high-volume production, draws the two sides of the industry even closer together.

Exit the Propeller Shaft

Much of the criticism of recent years has been levelled at the "stubborn" retention of the classic front-engine-rear-drive layout and a reluctance to adopt independent suspension all round. Both B.M.C. and Standard have this year introduced popularly priced cars with all-round independent suspension; the Triumph Herald is also notable for its reversion to a separate chassis frame in a vehicle of this class, while the new B.M.C. "babies"—the Austin Seven and the Morris Mini-Minor—depart radically from conventional design in many other respects. Although independent suspension of itself might have no intrinsic merit for commercial vehicles, the improved stability and traction usually provided by a good design certainly offer advantages on delivery vehicles that have to remain in use in all kinds of weather and often operate over poor surfaces. The rubber suspension units developed for the small B.M.C. cars also warrant close inspection for their promise of the virtual elimination of maintenance and long life expectation.

Of even greater potential interest for light commercial vehicles and perhaps for some applications of medium vehicles is the concept of the quickly replaceable power-transmission "package," with its unique front mounting, in the B.M.C. cars. Allied with front-wheel drive, it eliminates the lengthy propeller shaft and its interference with a low floor line. It is in effect another aspect of the design philosophy behind the rear-engined Leyland Atlantean bus—housing the engine and transmission where it least affects the functional design of the vehicle and in such a manner that time out of service for major running-unit attention can be reduced to a few minutes.

While the rear-engine-rear-drive layout might be ideal for buses, it is patently less so for goods vehicles because of interference with the load space. But the new B.M.C. arrangement could be advantageous in light goods vehicles by providing the good space utilisation of the forward-control layout with the clear floor space in the cab of the bonneted vehicle, with the possibility also of better loaded weight distribution. Another innovation in the B.M.C. newcomers that will be certain to find its way into future commercial vehicles is the Lockheed valve in the hydraulic braking system that varies the proportion of work done by front and rear brakes in line with the degree of weight transference that takes place during braking.

Power Units

The problems of engine designers for cars have been much the same as of those for commercial vehicles—the development of higher specific powers and improved fuel efficiency, though from the petrol engine rather than the diesel. Improved efficiency from the use of higher compression ratios has now proceeded about as far as is possible without sacrifice of smoothness, flexibility and low cost, many manufacturers having engines in production vehicles with compression ratios around 9 to 1. The conventional in-line engine is seen by two manufacturers to be occupying too much linear space in the chassis and perhaps heavier than need be in order to obtain the required strength and stiffness; their solution, following an American trend, has been to introduce twin-bank units, a practice that might advantageously be applied to large commercial vehicle engines. Superiority of the diesel as far as efficient use of fuel is concerned can be sampled at the show in a Hillman Minx fitted with the remarkable little Perkins Four 99 engine.

With all the advances in power units evident this year it is interesting to see that there are still no British exponents of air cooling, though it has been adopted for one of the three new American "compact" cars introduced at Earls Court. Various advantages have been claimed for direct air cooling but it appears that these have been weighed against the disadvantages—noisiness, power consumed in fan drive, higher cylinder-head temperatures and so on—by British designers and found wanting. On bore-stroke ratios there appears to be greater unanimity and the selection of the "square" or "oversquare" concept is practically universal for modern petrol engines.

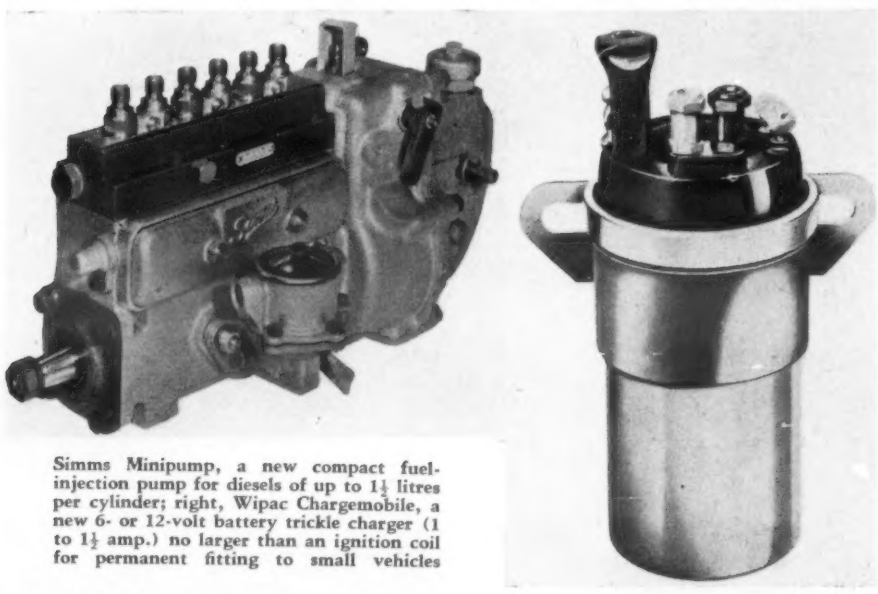
Transmission

A greater proportion than ever of cars of medium power and above is now offered with automatic transmission, almost all of the hydro-mechanical type produced by Borg-Warner which, although fitted to the recently introduced Austin diesel-engined taxicab, has little advantage to offer for commercial vehicles. Of greater promise for vehicles of low power-to-weight ratio are the optional automatic transmission now offered in the Hillman Minx and the Hobbs gearbox, which despite less interest on the part of manufacturers than its design and state of development appear to warrant, again makes an appearance on the maker's stand. The system offered in the Minx has been developed by Smiths and Rootes engineers; its main advantages lie in the use of a conventional layshaft gearbox and Smiths magnetic-powder couplings, both having high transmission efficiency. A mild disappointment is that no manufacturer has apparently yet come forward to take over the applicational development of the promising M.I.R.A. automatic transmission unit, though development for use in industrial trucks is now proceeding.

Limited Slip Differentials

Other items of interest in the transmission field that warrant the attention of the commercial vehicle world are automatic overdrive units operating in one or more gears and the limited-slip differentials now in production by Salisbury Transmission and Borg-Warner. Overdrive with either automatic or manual actuation operating on third and top gears of a four-speed gearbox could provide a good spread of ratios probably at lower cost and certainly with a good deal lower unsprung weight than a two-speed axle. Limited-slip differentials, now that they are becoming available, might remove one of the main difficulties of winter-time operation of single-drive three- and four-axle goods vehicles; they could also make redundant the added cost and weight of a driven front axle on a high proportion of the vehicles on which it is fitted as a little-used insurance against loss of traction when working off the road.

The application of disc brakes of Dunlop, Girling or Lockheed manufacture to ordinary as opposed to specialist cars is now commonplace. British manufacturers have a clear lead in the practical development of the caliper-type disc brake, which now appears ripe for adoption for the types of commercial vehicle that would benefit from its use.



Simms Minipump, a new compact fuel-injection pump for diesels of up to 1½ litres per cylinder; right, Wipac Chargemobile, a new 6- or 12-volt battery trickle charger (1 to 1½ amp.) no larger than an ignition coil for permanent fitting to small vehicles

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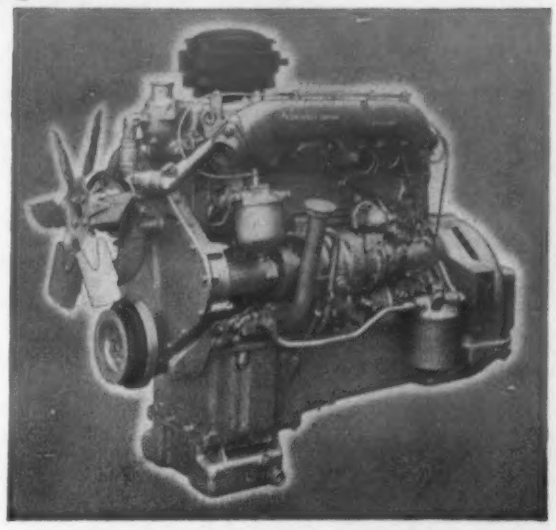

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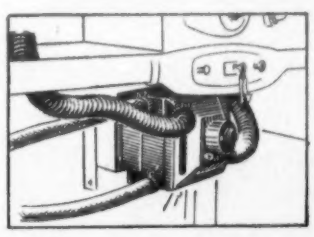

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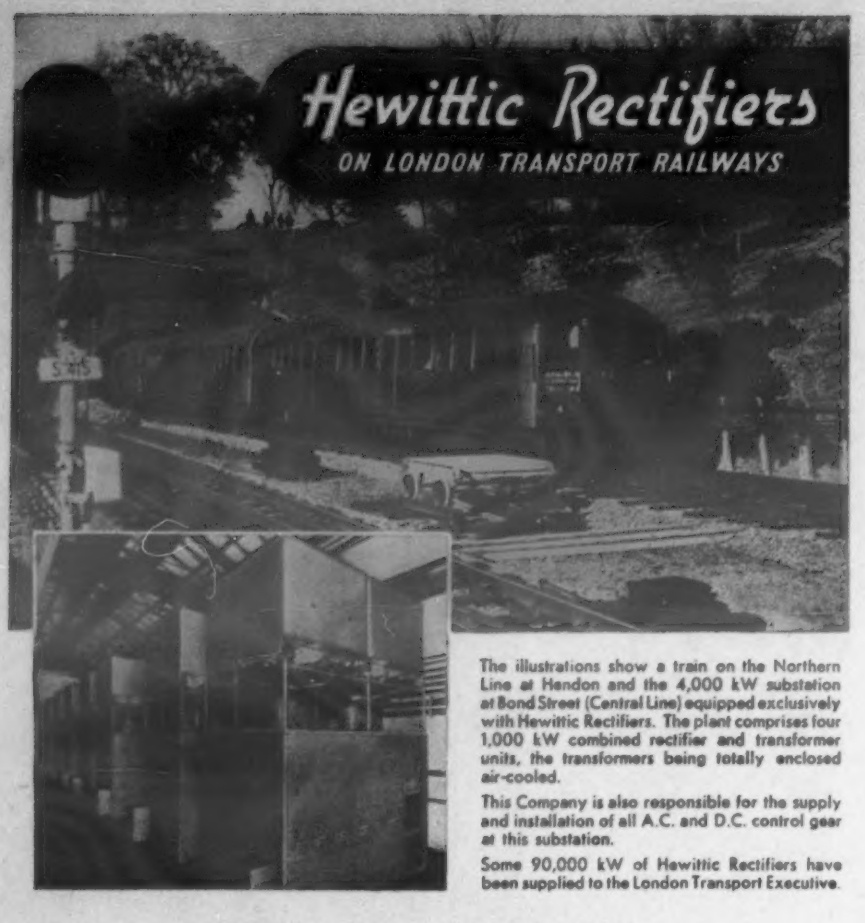

The illustrations show a train on the Northern Line at Hendon and the 4,000 kW substation at Bond Street (Central Line) equipped exclusively with Hewittic Rectifiers. The plant comprises four 1,000 kW combined rectifier and transformer units, the transformers being totally enclosed air-cooled.

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NEWS FROM ALL QUARTERS

Underground Car Park Little Used

It is stated that the extensive car park under the new Route 11 road in the city of London between Aldersgate and Moorgate, is three parts empty during the day, although surrounding streets are filled with parked cars. The City of London is to seek powers to enable the Corporation to prescribe charges for off-street car parking.

L.C.C. and Noise Abatement Society

At the last meeting of the London County Council it was stated that the council had received an invitation to membership of the newly born Noise Abatement Society. The chairman of the general purposes committee said he hoped the idea would be considered favourably. The chairman of the town planning committee stated that it was hoped that work on the Hyde Park Corner underpass should begin early next year.

Voice of the User in Northern Ireland

Northern Ireland is to have a body similar to the transport users' consultative committees in Britain, the Minister of Commerce, Lord Glentoran, has announced. It would be able to make recommendations to the Ulster Transport Authority. The U.T.A. accounts for the year ended September 30, 1959, are expected to show a small working surplus overall, despite railway losses. The working loss for the ex-G.N.R. section alone in Northern Ireland is about £350,000.

Canal and Waterways Services Publicised

Midlands traders and industrialists are being invited to see for themselves the latest developments in canal and inland waterway transport at a British Waterways exhibition to be held in Birmingham next month. This is part of a drive to attract more traffic to the canals and inland waterways, particularly export and import traffic between the industrial Midlands and ports on the River Humber and the River Severn. It is to be held in the Birmingham Chamber of Commerce, New Street, from November 3 to 6, and will be opened by the Lord Mayor of Birmingham, Alderman John H. Lewis.

New Great Central Timetable

A greatly revised train timetable for the Great Central Line has been announced by the London Midland Region but the commencing date has not yet been made available. On weekdays the *South Yorkshireman* to and from Bradford and Marylebone, will be withdrawn, as will nine other weekday trains to or from Sheffield or Manchester, but there will be seven trains to or from Nottingham instead. These trains will stop at Aylesbury, Brackley Central, Woodford Halse, Rugby Central, Lutterworth, Leicester Central and Loughborough Central. To replace the *South Yorkshireman*, a train will leave Halifax at 8.30 a.m. for Sheffield Midland where the coaches will be coupled to the 8.52 to St. Pancras. The Midland route service between Sheffield Midland and Nottingham Midland will be augmented with fast diesel trains.

Oil Terminal in Cardiff

The Regent Oil Co., Limited, has now announced that it is planning a modern distributing terminal at Cardiff. The £500,000 development will be made on acreage leased from the British Transport Commission on the south side of the Queen Alexandra Dock. Construction will include 30,000-ton bulk storage and facilities for receiving ocean tankers.

Victorian Minister Studies Roads

Sir Thomas Maltby, Minister of Public Works in the Government of Victoria, is making a three-weeks' tour of Britain, principally to study road works and building of schools. On his itinerary were, among other projects, the Maidenhead, Oxford, and St. Albans by-passes, the Ross Spur highway, the Great North Road between Wetherby and Grantham and the London to Birmingham motorway.

N.U.R. Wage Claim

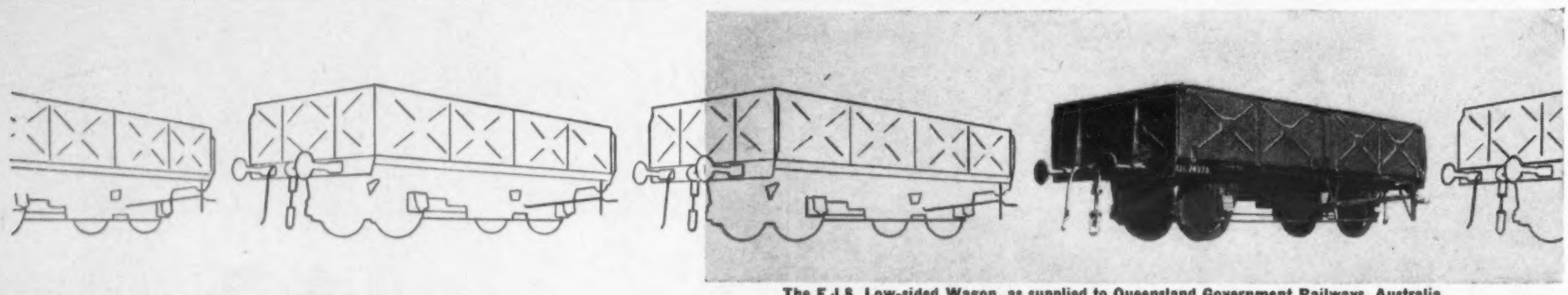
The wage claim presented by the National Union of Railwaymen alone of the three railway operating unions last week reached the second stage of the negotiating machinery when it came before the Railway Staff National Council. On Monday this week the three unions met to discuss their projected claim for a 40-hour week. On top of this the report of the Guillebaud Committee on railway wages and salaries is expected to be published about next March.

Stafford—Rugby Sunday Interruption

There are no Sunday trains during the winter on the London Midland Region main line between Stafford and Rugby as from October 25 until the summer of next year. This is to enable engineers to work on the electrification of the line. Trains normally using the main line on Sundays will be diverted via Bescot, Stechford and Coventry, and the journey time will be increased by some 35 min. To enable the main-line diversions to be operated smoothly, the local service between Nuneaton, Coventry and Leamington will also be withdrawn.

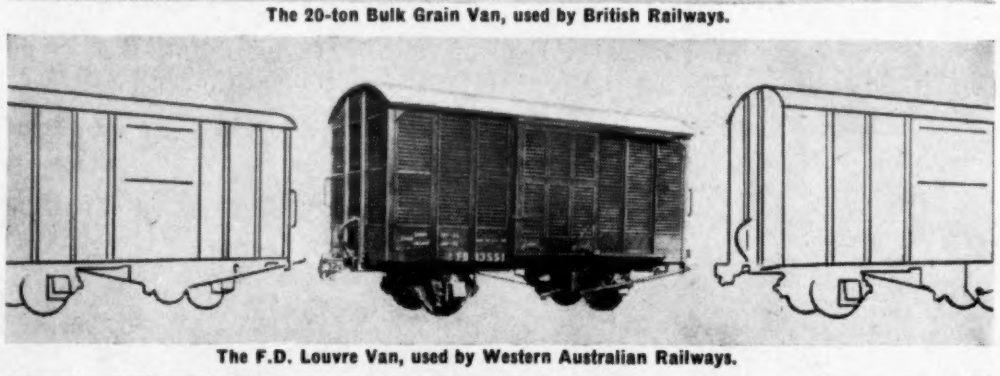
Blackfriars Underpass Approved

Approval was last week given by the City of London Court of Common Council for the first stage of an important road improvement in the Blackfriars area. This is an underpass linking Victoria Embankment with Queen Victoria Street, passing beneath Blackfriars Bridge approach and the adjoining railway bridge. It would commence in the centre of the Embankment east of Carmelite Street and emerge at a right angle to Queen Victoria Street opposite St. Andrews Hill. The river wall will have to be extended from Blackfriars jetty, opposite Unilever House, to Puddle Dock and Parliamentary powers will be necessary for this and other works. It is hoped that the underpass would be constructed by 1964, whereafter there would be no right turn from the Embankment on to Blackfriars Bridge. A second stage would later carry the underpass through towards Tower Hill.



The F.J.S. Low-sided Wagon, as supplied to Queensland Government Railways, Australia.

The 20-ton Bulk Grain Van, used by British Railways.



The F.D. Louvre Van, used by Western Australian Railways.

British Railways 57-foot Utility Van.

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The figures prove that Pressed Steel have tremendous productivity—and a rich store of engineering experience. But they tell only part of the story. For they do not show the progressive approach of our design staff, the quality of engineering that goes into each job, and our record for prompt delivery. Nor do they show how constant, intensive research has made Pressed Steel ready to play an active part in the future development of the world's carriages and wagons.

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Aer Lingus Half Year

FLYING TIGER RESULTS

HALF-YEAR figures announced last week by Aer Lingus—Irish Air Lines for the six months up to September 30, 1959, showed an operating surplus of £420,000. During the six months the company carried 381,743 passengers, an increase of 33,471 (or 10 per cent) on the figure for the corresponding period last year. The amount of cargo carried was 4,487 tons—an increase of nearly 1,000 tons (or 27 per cent) on the figure for the first half of 1958. The operating surplus of £420,000 is exactly the same as the surplus for the corresponding half of 1958, but interest on capital for the purpose of providing new aircraft doubled in the half-year under review, reducing the overall surplus to £345,000 compared with £385,000 in the first half of last year. Commenting on the half year's operations in the course of a talk to staff in Dublin, Mr. J. F. Dempsey, general manager, said: "We have achieved quite a satisfactory result, since our estimates for this current year were not very promising. Last year's traffic was considerably augmented by the Lourdes Centenary and we had doubts if the increase in scheduled traffic expected in 1959-60 would sufficiently compensate for the loss of that unusually heavy Lourdes traffic. However, scheduled traffic has been considerably better than was forecast. With our short-haul network we have to achieve relatively high load factors if we are to stay in business, much higher, in fact, than any other European operators. In the month of August we had the highest load factor—78 per cent (the same as for August, 1958)—of any scheduled operator in Europe. Our friends in B.E.A. were next with 75 per cent, while the average for all members of Air Research Bureau, which includes 11 of the principal operators in Europe, was 65 per cent. That we do manage to achieve this high load factor is a credit to the careful planning of our technical and commercial groups."

Total revenue for the first half of the financial year under review amounted to £2,602,000—a 3 per cent increase on the figure of £2,523,400 for the corresponding period of 1958. The greatest single revenue earner was passenger traffic, which provided £2,239,100, representing 86 per cent of the revenue total and showing a 2 per cent increase over the same period last year. Total expenditure at £2,182,000 for the period was 4 per cent up on the figure of £2,103,400 for the corresponding period of last year. While scheduled traffic to Great Britain was almost 20 per cent up on last year there was an overall reduction in Continental traffic. The Lourdes route was not nearly so busy and this adversely affected the Continental totals. However, new routes to the Continent were satisfactory except for the Lisbon route which got away to a slow start because of the high fare which was forced on the company—at the recent traffic conference of the International Air Transport Association in Honolulu Aer Lingus succeeded in having the fare reduced by 30 per cent. During the period under review Aerlinte Eireann carried 15,951 passengers, an increase of 6,286 on the first five months of operations to September 30 last year. Total revenue was up from £729,000 to £1,206,000 and total expenditure was up from £1,117,000 to £1,386,000 resulting in an excess of expenditure over revenue of £180,000 against £388,000 for the first five months of operations.

Hawker Siddeley Plan for Air Ferry

Hawker Siddeley Aviation, which has developed the Armstrong Whitworth Argosy freighter coach and is also building a military version for the Royal Air Force, is now developing the third version of the series—the AW670 Air Ferry. With a wider fuselage and designed for low altitude operations, it will take six large cars—or between eight and 12 smaller cars—plus 30 passengers on an upper deck. The wide fuselage version could also be used as a short-range airbus. For such an operation the lower deck could take up to 96 passengers and, with 30 passengers on the upper deck, could carry 126 people at a direct operating cost of under 2d. per seat-mile on such stage lengths as London—Manchester.

K.L.M. Jet Plans

K.L.M. (Royal Dutch Airlines) has announced plans for the introduction of its jet aircraft. It has 12 DC8s on order, the first of which will be delivered in January. In April a daily DC8 service will commence between Amsterdam and New York. These flights will be made non-stop, 8 hr. westbound and 7 hr. eastbound. A number of transatlantic services will also be operated with DC7C aircraft. Next May the DC8 is to start flying on the route from Amsterdam to Mexico City via Montreal and Houston, thus shortening the travel time by 9 hr. to 15 hr. Later in the summer it will be possible to fly by K.L.M. DC8 via South-East Asia to Tokyo (via Karachi and Bangkok) in a mere 27 hr. In addition, it is intended to replace the Super Constellation on the Sydney route with DC8 equipment in October, 1960. Singapore is also to be included in the DC8 programme during this period. From November, 1960, additional fast DC8 services will be operated to the Caribbean.

Good Year for Flying Tiger

Record air freight revenues and the largest operating earnings in company history were reported by the Flying Tiger Line for the year ended June 30, 1959. Mr. Robert W. Prescott, president, announcing the first profitable year in domestic air freight operations in the 14-year history of the airline, said net income from operations totalled $2,806,389, which more than doubled the $1,399,573 recorded for the previous year. After debt expense and taxes, net income and special items were $1,391,366 against $1,307,782 in 1958. However, special items resulting from gains on the sale of aircraft contributed $864,004 to net results in 1958, compared with $380,226 in 1959. Air freight revenues, rising to $13,315,698, highest in company records, showed a gain of 39 per cent over the $9,595,074 reported in 1958 but the gain was offset by a decline of charter and service sales revenues in 1958-59 to $21,264,238, from $24,265,475 in 1957-58. This reflected in part the increased concentration of the carrier's fleet on domestic common carriage traffic and a resulting decrease in military contract group tourist business. Mr. Prescott said that one of the major factors that had been restraining the more extensive development of a volume air freight market had been the lack of economic aircraft with low operating costs per ton mile. The introduction of the CL44D airfreighters would permit a reduction in air cargo rates of between 30 and 40 per cent. This phase would be the beginning of the air freight business and the end of the development and experiment in the carriage of property by air.

LONG SERVICE TO MUNICIPAL TRANSPORT

A. A. Jackson

Mr. A. A. JACKSON, M.Inst.T., F.R.S.A.

• • • • • •

When Mr. Arnold Arthur Jackson retires from the post of general manager and engineer, Bolton Corporation Transport, which he has occupied for the past 20 years, he will not only have served the municipal passenger transport industry in particular for 43 years but will also have rendered stalwart support to road passenger transport as a whole as an erstwhile member of council of the Tramways and Light Railways Association and subsequently of the Public Transport Association. Born on October 29, 1899, and educated at Nottingham High School, he received his technical and engineering training at University College, Nottingham. Joining Nottingham Corporation Tramways in 1916 he served successively as junior assistant, technical assistant, and chief assistant before moving to Coventry as deputy transport engineer in 1930. After three years at Coventry, he was appointed general manager and engineer, St. Helens Corporation Transport, and remained there until 1939, when he commenced his service with the Bolton undertaking. For more than 12 years Mr. Jackson served as honorary secretary of the Lancashire and Cheshire area ("C") of the Municipal Passenger Transport Association and he also was for many years on the executive committee of the Federation of Municipal Passenger Transport Employers, a member of the National Joint Industrial Council for the Road Passenger Transport Industry and of the National Joint Council for Craftsmen Employed in the Municipal Passenger Transport Industry. A member of the Institute of Transport and past chairman of its North Western Section, he won the Graduate Silver Medal in 1928-29 for an essay, "The Sphere of the Railless Trolley Vehicle System." He is a past chairman of the Sir William Chamberlain Memorial Trust Advisory Committee and is also a fellow of the Royal Society of Arts.

LETTERS TO THE EDITOR

Station Information

LONDON TROLLEYBUSES

SIR,—In "News from All Quarters," October 24, you state that the hotel reservations bureau at Euston is something entirely new for British Railways. Many services of this sort, which are taken for granted in other countries, are lacking on British Railways.

Arrivals at Victoria are astonished that there is no such thing as a tourist office on the station and in the summer this organisation, which was created to help a totally different class of people (young girls coming to work in this country), finds itself handing out tourist information and hotel cards, to the exclusion of its own work. Hotel reservation bureaux are needed on all large stations, even if they only take the form of panels, illuminated to show where rooms are free, as is common practice in Europe.—Yours faithfully,

D. TREVOR ROWE,
International Travellers' Aid Association.

Platform 8, Victoria Station, S.W.1.

Removal of Trolleybus Poles

SIR,—I was interested to read in MODERN TRANSPORT of October 10 the reference to removing the now obsolete trolleybus steel poles in London. The method of removal suggested by cracking the concrete will, I feel, cause some damage to the adjacent underground services.

I shall be surprised if the contractor does not revert to the well-tried method of excavating to about 6 in. to 9 in. below pavement level, burning off the pole and leaving the stub undisturbed. You will appreciate my interest in this problem when I recall that about 25 years ago I was responsible for erecting some few thousand of these poles!—Yours faithfully,

G. P. GOODMAN.

54 Coronation Road, Maghull, Nr. Liverpool.

London Trolleybus History

SIR,—I have much enjoyed reading the various articles published in connection with trolleybus abandonment in London and your writers are certainly to be congratulated on the wealth of historical detail they have given us. The Woolwich articles have not been exceptions.

Has anyone a photograph of a trolleybus operating on service 694? It would be interesting for the record. Further, can anyone produce a photograph of London trolleybus No. 60? In spite of what the historians (and, so they say, the official lists) say this vehicle carried the classification X1 on the back panel. This classification is usually attributed to 61, but a careful search of the vehicle never revealed a mark to this effect, but a search of No. 60 on the same day was more rewarding. If only I had photographed it, showing X1 and the non-standard staircase!—Yours faithfully,

PETER W. BOULDING.

St. Peter's School, Horseshoe Lane, Guildford, Surrey.

Buses East of Woolwich

SIR,—The tramways at the south-eastern extremity of the London system, described in your articles of March 7 and October 10, were presumably fortunate in that they were never exposed to the full blast of bus competition. The London General Omnibus Company probably realised how "thin" the territory was before the days of railway electrification. Some notes on the L.G.O.C. services in Erith and some remarks on that municipal system may be apposite.

L.G.O.C. Service

In July, 1914, the police approved an L.G.O.C. bus service from Woolwich to Erith. The negotiations for this had already worried the L.C.C., which had experienced severe competition from buses crossing similar tramway frontiers elsewhere, so it asked Erith if it could now insert the junction at Abbey Wood and jointly run a through service from Beresford Square to Bexleyheath via Erith. Erith bravely demanded that it should be from the Free Ferry or not at all, which would have been the same as the 698 trolleybus 21 years later, but Bexley refused to have L.C.C. cars on its Northumberland Heath branch, so no further action was taken. Curiously, wartime exigencies did produce service by L.C.C. eight-wheeled cars during the war on the Northumberland Heath branch on at least one occasion.

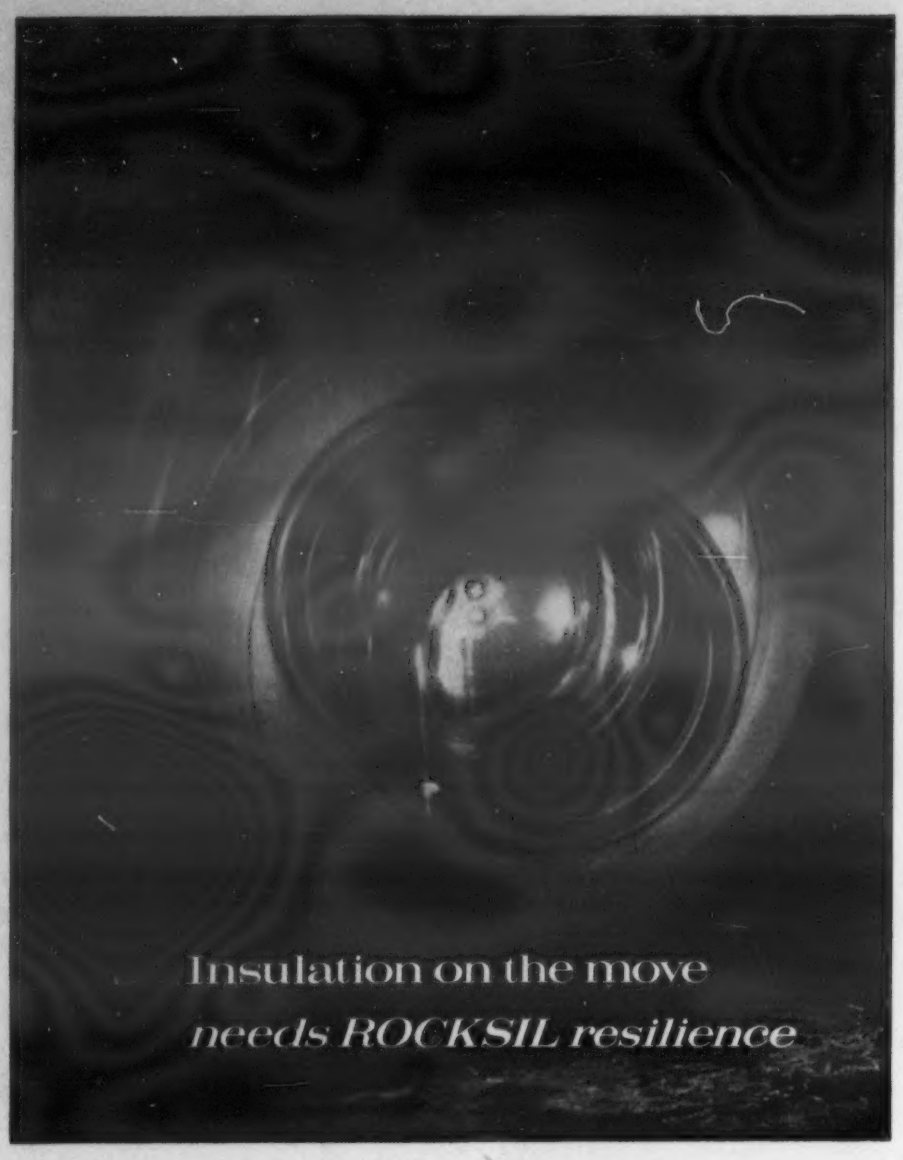
Bus route 98 from Woolwich to Erith via Abbey Wood and the tramway began in 1915, whereupon Erith Council applied for powers to run its own buses on the Erith to Plumstead route via Woolwich Road, on which it had asked in 1903 for tramway powers. After Government intervention Erith withdrew its application, the General curtailed 98 at Lower Belvedere, and on May 1, 1916, the General started its 99 from Erith to Woolwich via Erith's proposed route, continuing onwards to Poplar via Blackwall Tunnel.

Better Days in Erith

The London General route 99, which had had a wartime Government subsidy, was withdrawn on March 31, 1919, but reinstated on August 18, 1920, as Erith to Woolwich only. The Erith tramways then settled down to 13 uneventful years, punctuated only by much track relaying, further talk about the Abbey Wood junction, attempts by the Ministry of Transport in 1921 and 1924 to persuade the L.C.C. to absorb the Erith tramways, and a desire latterly by Erith to modernise its undertaking which was frustrated by the fear of London Transport coming. Post-war inflation was avoided, and the 1908 fare scale was still in force in 1933.—Yours faithfully,

ERITHMATICIAN.

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.



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TA2591

OFFICIAL NOTICES

IRELAND'S TRANSPORT COMPANY

TENDERS are invited for the supply of:

Item 1.

15 mixed traffic bogie diesel locomotives of not less than 800 horsepower with top speed of 70 miles per hour.

Item 2.

14 shunting and transfer diesel locomotives of not less than 400 horsepower with top speed of 45 miles per hour.

Item 3.

14 sets of diesel engines and transmission equipment of not less than 400 horsepower suitable for installation in locomotives similar to those mentioned in Item 2 above.

Item 4.

7 shunting diesel locomotives of not less than 160 horsepower with top speed of 25 miles per hour.

Copies of Conditions of Tendering, General Conditions of Contract, Specifications, Drawings and Forms of Tender may be obtained on application to the Chief Engineer, Coras Iompair Eireann (Ireland's Transport Company), Inchicore Works, Dublin. Applicants should indicate the items for which documents are required. Applications must be accompanied by a deposit of £10 (Ten Pounds) which will be refunded on receipt of a bona fide Tender.

Tenders and accompanying documents enclosed in a sealed cover, in accordance with the "Conditions of Tendering" must reach the Secretary, Coras Iompair Eireann (Ireland's Transport Company), Kingsbridge Station, Dublin, not later than 12 noon on Wednesday, January 20, 1960.

M. J. HAYES,
Secretary.

Kingsbridge Station,
Dublin.

NIGERIAN RAILWAY CORPORATION

DIESEL TRACTION SUPERINTENDENT

THE Nigerian Railway Corporation invites applications for the following post:—Diesel Traction Superintendent.

Duties: The Diesel Traction Superintendent will be responsible for the supervision of the operation, repair and servicing of diesel locomotives under the jurisdiction of the Chief Superintendent.

Qualifications: Candidates should have received good education and have served an apprenticeship or recognised training course with a company manufacturing diesel locomotives or had subsequent training with such a company. Similar experience with a first-class railway would be accepted.

They must have had extensive experience in the servicing, maintenance and repair of diesel engines, electrical equipment and mechanical parts of diesel locomotives and have some railway operating experience. Knowledge of machine and repair shops methods is necessary. They must be capable of controlling staff and labour.

Candidates must possess A.M.I.Mech.E. or A.M.I.E.E., or have taken parts A and B thereof.

Salary: £2,250 per annum. Appointments may be on pensionable terms or on contract with a gratuity payable on completion of contract at the rate of £37 10s. 0d. for each completed month of service.

Tours: 15 months in Nigeria, followed by 15 weeks' leave on full pay.

Quarters: Partly furnished quarters are provided at low rental.

Allowances: There are attractive family, travelling, transport and other allowances.

Send postcard before November 9, 1959, mentioning the post and this paper for further particulars and application form to:

The London Representative, Nigerian Railway Corporation, Nigeria House, 9 Northumberland Avenue, London, W.C.2.

B.O.A.C. IN 1958-59

Causes of £5 Million Loss

FUTURE OUTLOOK BRIGHTER

PUBLICATION of the annual report and accounts of the British Overseas Airways Corporation for the year ended March 31, 1959, was delayed by the dissolution of Parliament which prevented their required deposition in the House. With the assembly of the new Parliament the report has now been published (H.M. Stationery Office, price 4s. 6d.) and shows a total combined loss, after remuneration of capital, for B.O.A.C. and its associated companies of £5,179,420, compared with £2,839,350 for 1957-58.

Operations of the corporation itself yielded a profit of £843,123 before providing for interest on capital. Thereafter there was a deficit of £2,084,651, compared with £2,248,602 in the previous year. When it is realised that the wanton strike by engineering staff immediately after the placing of the de Havilland Comet 4 on the North Atlantic service in October, 1958, cost all of £1,250,000, it will be seen that the year did represent a considerable improvement upon its immediate predecessor.

New Aircraft

Delivery of the corporation's fleet of long-range Britannia aircraft was completed on December 31, 1958. In October, 1958, the Comet 4 entered service on the London—New York route and B.O.A.C. became the first airline in the world to operate jet-propelled aircraft in both directions across the North Atlantic. Comet services to Canada were introduced on December 19, 1958. With the withdrawal of older piston type aircraft B.O.A.C. has become the first world wide airline to be equipped predominantly with turbojet and turboprop aircraft. Constellations were finally withdrawn from service in September, 1958, and Stratocruisers were retired progressively throughout the year.

The total traffic revenue increased by 9.1 per cent from £53,031,491 in 1957-58 to £57,887,584. This compares with the average increase of 5 per cent for all major airlines. It was, however, substantially short of estimate due largely to the strike and its subsequent reaction on bookings. The corporation's earnings made a significant contribution to the United Kingdom's invisible exports. The net earnings of foreign exchange, after offsetting current expenditure incurred abroad, amounted to approximately £12 million, of which £7 million was in U.S. and Canadian dollars.

Adverse Factors

Adverse factors contributing to the overall loss included the continuance for several months of the year of the depressed world conditions leading to short fall of expected earnings which had first become manifest in the autumn of 1957, and the abnormal losses of some of the associated companies. The considerable expenditure on introducing new aircraft fleets into service, involving unavoidable duplication of expense for long periods, had fallen with particular weight in this financial year.

In considering the results it must again be emphasised that the corporation bears a charge for interest on the whole of its capital, whereas many of its overseas competitors normally have a material percentage of equity capital which does not attract a dividend unless profits are available. It has been necessary to make a charge in the accounts of £1,123,069 of net capital loss on the disposal of aircraft and other assets. This loss was a direct sequel to the withdrawal of the Comet 1s from service in 1954. The corporation had no alternative but to purchase a number of second-hand aircraft at inflated prices. With the retirement of these aircraft from service a heavy loss was bound to arise on disposal compared with book values.

Level of Fares

It is an essential condition of any policy of expansion of the travel market, on which future progress of the industry will depend, that cheaper fares should be introduced as economic considerations allow. B.O.A.C. has committed itself to the purchase of 15 Boeing 707 and 35 Vickers VC10 turbojet aircraft at a cost of £90,000,000 (exclusive of spares) in the knowledge that these aircraft will show a lower cost per seat mile than the types they supersede, and in the expectation that the improved economics of the new aircraft can be passed on to the public in the form of cheaper fares. The corporation claims that it has always been in the vanguard of movements to cheapen fares, but it believes that the international fare levels agreed between the world's airlines must be the basis of well ordered competition. To leave each airline free to set its own fares would be a retrograde step as past experience in this and other transport industries has shown. The corporation will continue to press for the orderly extension of lower fares throughout the world. (Since the report was written it has, of course, pressed strongly at the Honolulu traffic conferences for the extension of economy class fares.)

Before aircraft enter into regular service operations they must go through a period of pre-operational development which involves considerable expenditure on aircraft modifications, associated flying and ground personnel. Experience has shown that long pre-operational periods, as well as extra flying, has involved the corporation in more expenditure for British types than for American types. This is due to the fact that the corporation is the first operator of any British types it purchases, whereas an American type would be otherwise developed by the time B.O.A.C. acquired it. It is the view of the corporation that the expense attendant upon introducing an aircraft into service is part of its development which should be regarded as a proper charge against research and development moneys which are at the disposal of the Government. It has seen fit to write off a sum of £5,000,000 in respect of the abnormal development costs of the Britannia and Comet aircraft.

Associated Companies

The results of the associated companies were responsible for a large part of the overall losses of the corporation. The report points out that they contribute to its world coverage, play an important part in its commercial strategy and that their value to B.O.A.C. must not be judged solely in terms of their financial results. Nevertheless, losses of the magnitude of the 1958-59 results are clearly insupportable and various steps have been taken to avoid a recurrence of such a bad year. The justification for investment in these companies is kept continuously under review but a special reappraisal is being made for each company with a view to judging whether its current and future value to the corporation is commensurate with its likely future prospects so far as they can be predicted. It is pointed out that Middle East Airlines had a particularly bad year owing to political disturbances in the area which it serves and to the revolt in the Lebanon which occurred during the peak travel season.

One of the most encouraging features of the year's working was the reduction achieved in the cost level per unit of capacity produced. This reduction amounted to more than 6 per cent in 1958-59 and further improvement is expected during the present year. A significant contribution to this result was made by the engineering department which has achieved substantial progress with the reorganisation put in hand by the present management in 1957 which is aimed at reducing the corporation's previous high level of maintenance costs. In face of an increasing output of capacity, the number of staff employed in the department had already been reduced by over 1,100 persons, at the date of the report, through the process of normal and accelerated wastage, supplemented by the early retirement of a number of the more senior staff. Overall, the total corporation staff strength at March 31, 1959, was 19,010—a reduction of 2.97 per cent on last year's figure.

Current Results

In view of the time that has elapsed since the end of the year covered in the report, the chairman, Sir Gerard d'Erlanger, has reviewed the experience of B.O.A.C. during the first half of the current year. There were marked increases in traffic and revenue this summer. Passenger revenue improved from £21¼ million in the first half of 1958-59 to about £25¼ million this year—an increase of approximately £4 million, or 18 per cent. Of course, the winter was still ahead of them, but a very substantial improvement on last year's results seemed to be assured. Indeed, a breakeven financial result, after payment of interest, might be achieved by B.O.A.C. in the current year.

It must be emphasised, however, that much depended on the loads carried during the coming months when there would be an increase of more than 20 per cent in available capacity compared with a year ago. The expansion of traffic had been particularly marked on the transatlantic routes. Passenger revenue on transatlantic services increased by 35 per cent during the first half of the current year and net dollar earnings in this period doubled, from $14 million to $28 million.

Despite a net loss of more than £500,000 because of the unexpected delay in obtaining the official permit to fly across the Pacific on the round-the-world service, the overall result of the corporation's own operations for the first six months of this financial year showed a surplus of approximately £1,100,000, after payment of interest, an improvement of £1½ million compared with the equivalent period in the last financial year, while results of associated companies also showed an improvement of £1½ million.

A wide range of Swiss-designed electro-mechanical lifting platforms is to be manufactured in Britain by Wharton Crane and Hoist Co., Limited, Reddish, Stockport. Four standard models together give a capacity range of from a few pounds to 15 tons and height of lift of a few inches to over 16 ft. Simple modifications permit almost any requirement to be met. The manufacturer claims that the Wharton-Vilver platforms, being of simple electro-mechanical design, are highly adaptable and save capital and installation costs in comparison with hydraulic or other conventional means of load-lifting. The small models, for example, often require no excavations. In some cases an excavation of only four inches or less is required.

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Forthcoming Events

November 2.—Institute of Road Transport Engineers (Scottish). Paper by Mr. R. P. Chilton, "Chassis and Engine Manufacture." At Institution of Engineers and Shipbuilders, Elmbank Crescent, Glasgow. 7.30 p.m.

Institute of Transport (Darlington). Paper by Major D. Russell-Pavier, "Some Facts about Road Transport in the Army of Today." At United House, Grange Road, Darlington. 7 p.m.

Institute of Transport (East Anglia). Paper by Mr. L. A. Castleton, "The Road-Rail Problem." At 79 Thorpe Road, Norwich. 6 p.m.

Institute of Transport (Sheffield). Paper by Captain J. C. Kelly Rogers, "Air Transport." At the Royal Victoria Hotel, Sheffield. 7.30 p.m.

November 3.—Institute of Transport. Anniversary luncheon. Speaker Field Marshal Viscount Montgomery of Alamein. At Connaught Rooms, Great Queen Street, W.C.2. At 12.15 for 1 p.m.

Permanent Way Institution (Leeds and Bradford). Paper by Mr. W. Powell, "Clearances." At B.R. Social and Recreation Club, Leeds City Station. 7 p.m.

Institution of Civil Engineers. Presidential address by Mr. A. C. Hartley. At Great George Street, S.W.1. 5.30 p.m.

Institute of Transport (Midland) Paper by Captain Reginald Ellis, "Air Traffic Control—A Day in the Life of a Civil Air Pilot." At Engineering Centre, Stephenson Place, Birmingham. 6.30 p.m.

Institution of Road Transport Engineers (Eastern). Paper by Mr. G. Grime, "Road Surfaces." At Golden Hind Hotel, Cambridge. 7 p.m.

Institute of Transport (North Western). Paper by Mr. J. Crosland Taylor, "Necessity is the Mother of Invention." At the Town Hall Annexe, Manchester. 6.15 p.m.

November 4.—Institute of Petroleum. Paper by Mr. W. S. Ault, "Oil and Transport." At Institute of Petroleum, 61 New Cavendish Street, W.1. 5.30 p.m.

Electric Railway Society. Paper by Mr P. M. Kalla-Bishop, "Italian Electrified Private Railways." At 153 Drummond Street, N.W.1. 7.15 p.m.

November 5.—B.R. (Western Region) London Lecture and Debating Society. Paper by Mr. A. R. Dunbar, "Modernisation and Men." At H.Q. Staff Dining Club, Bishop Bridge Road, W.2. 5.45 p.m.

Institution of Electrical Engineers (Utilisation). Paper by Mr. M. C. Crowley-Milling, "The Application of Irradiation in Industry." At Savoy Place, W.C.2. 5 p.m.

Institute of Transport (Merseyside). Paper by Mr. A. S. Mountfield, "A Port in Relation to the National Economy." At Chamber of Commerce, Liverpool. 6.30 p.m.

November 6.—Railway Club. Paper by Mr. T. B. Sands, "The Railway of the West of England." At Royal Scottish Corporation, Fetter Lane, E.C.4. 7 p.m.

Institute of Transport (Leicester). Paper by Mr. S. Ash, "Signalling System." At the Bell Hotel, Leicester. 7 p.m.

Institution of Highway Engineers (London). Paper by Mr. S. E. French, "Some Aspects of the Design of Road Improvements on an Urban Area." At the Institution of Structural Engineers, 11 Upper Belgrave Street, S.W.1. 5.30 p.m.

November 7.—Railway Correspondence and Travel Society (South of England). Paper by Mr. S. C. Townroe, "Breakdown Gangs." At Junction Hotel, Eastleigh, Hants. 6.30 p.m.

AN A.E.C. 18 CU. YD. DUMPER

In Production After Field Trials

340 H.P. ENGINE AND TORQUE CONVERTER

FIRST deliveries are now being made of the enormous 18 cu. yd. A.E.C. Dumptruk, newcomer to the A.E.C. range of off-the-road earth-moving vehicles, and one of the largest of its class available to contractors and other users. This impressive vehicle weighs approximately 50 tons if loaded to its rated capacity of about 25 tons and it is powered by the A.E.C. AVT1100 340-h.p. turbocharged six-cylinder diesel engine. The first of an order for six was last week handed over at Southall by Sir William Black, chairman of A.E.C., Limited, to Colonel P. McA. Sinclair, a director of Richard Costain, Limited, which has a use for this size of machine at its Acorn Bank opencast site. An initial order for one has been placed by R. A. Davies (Midlands), Limited, of Birmingham.

The Costain organisation provided the proving experience for two prototypes of this model Dumptruk and also advised on its development. The Scottish Land Development Corporation, which has been marketing Dumptruks, and is the sole concessionnaire, also gave invaluable assistance in the same direction. It is therefore claimed that they have undergone thorough field trials. It is considered that economies possible by the use of the new truck will soon repay the initial cost, which was roundly £100,000 for six units. They are being built at the Alcester factory.

A prototype A.E.C. 18 cu. yd. Dumptruk loaded with overburden at the Costain opencast site at Acorn Bank. The average load here is 28 tons

Sprung Chassis

Unlike many machines of this type, the 18 cu. yd. Dumptruk is fitted with springs to the rear axle as well as the front. Apart from relieving the frame and axles of excessive shocks while loading from the larger sizes of digger now coming into regular use, this results in a considerable increase in tyre life due to relief from impact loads and reduction in wheel slip from bounce. It also enables higher operating speeds to be maintained.

For the transmission, a three-stage torque-converter has been chosen as this gives a wide range of torque multiplication to cover adequately all normal conditions without requiring any change of gear in the three-speed auxiliary gearbox. This remains in the gear selected for the particular duty and control is entirely by the accelerator. The hydraulic hoist equipment of Edbro manufacture is well proven in design and operation; the two direct three-stage rams are double acting in the last two stages to give power return for the body,

Main frame, tubular crossmembers and body construction revealed, also underframe cradle for Edbro B. and E. tipping gear

and, by means of the damper valve incorporated, retain complete control against self-tipping while the body is being raised. Power is provided by a Hamworthy gear type pump mounted on the auxiliary gearbox. Particular attention has been paid to operator-comfort in providing a wide field of vision to the front and rear—in this the sloping screen plays a big part in reducing glare and dust settlement.

Turbocharged Engine

The AVT1100 turbocharged four-stroke diesel engine has a bore of 6½ in. and a stroke of 6½ in., capacity 1,083 cu. in. Wet cylinder liners are employed, and a toroidal combustion chamber, with four valves per cylinder. Maximum torque is 1,050 lb./ft. at 1,200 r.p.m.; the maximum output of 340 h.p. is quoted as produced at 1,900 r.p.m. The 18-in. twin plate Borg and Beck clutch is air-pressure assisted and the total surface area is 620 sq. in.

The three-stage torque converter referred to is a Twin Disc model CO-11554-O unit, giving a torque ratio varying automatically from 1 to 1 up to 5.2 to 1 when the output shaft is stalled. It incorporates a free wheel which locks the impeller to the engine during overrun and thus enables engine braking to augment the road-wheel braking, which is an important feature of this torque converter. It operates on diesel fuel drawn from the main fuel tank and circulated by an engine-mounted charging pump, the oil being cooled by means of a heat exchanger in the engine cooling system. A three-speed and reverse gearbox provides alternative ratios for light running, normal duties and extra severe duties.

Rear Axle

A Kirkstall double-reduction extra heavy-duty type rear axle achieves a first reduction by spiral bevel gears with fully-floating halfshafts and a secondary reduction by planetary gears within the rear wheel hubs. The overall reduction ratio is 11.9 to 1. Semi-elliptic springs are used both front and rear, but all springs are eyeless, bearing against slipper blocks on the frame and having renewable side plates. The axles are located by rubber-bushed radius arms front and rear. Air-operated brakes on front and rear axles are actuated by pedal or by a hand valve mounted on the dash panel. The rear brakes are 19½ in. by 8 in. and those at the front 19½ in. by 7 in. The lining thickness in both cases is ¾ in.

The frame sidemembers measure 16 in. by 6 in., with three large diameter tubular crossmembers between the axles and one 8 in. diameter tubular crossmember at the rear. The inter-axle members pass through the webs of the frame and are welded on both sides. The rear member is welded into steel brackets which combine the body hinges, the rear spring slipper pads, and radius rod anchorages. At the front a steel plate welded between the sidemembers in conjunction with the channel section bumper provides a robust boxed section. Two 1-in. thick steel-plate members suitably webbed are welded between two tubular crossmembers to provide a cradle for the twin hydraulic rams.

Left-hand control steering is adopted, with cam and double roller steering box having integral valve gear for the twin rams which provide power assistance. The cab is offset to the left-hand side for rear vision. Tyre equipment is 18.00 by 25, 28-ply rating Dunlop Power Grip fitted to 13.00 by 25 demountable-type rims.

Tipping Gear

The Edbro B and E 15 DNT twin ram three-stage tipping gear gives a 70-deg. angle of tip with double-acting cylinders on the final two stages. A damper valve is incorporated to control the tipping action and to prevent self-tipping. Hydraulic pressure is supplied by a Hydreco gear pump unit-mounted with the power take-off and fitted on the auxiliary gearbox. A plunger-type control valve operated from the driver's cab gives four positions, i.e. "lift," "hold," "power down" and "float." A compensated float control valve maintains constant lowering irrespective of the load. The tipping time to the full angle of 70 deg. is 10 sec. The dumper body has a struck capacity of 18 cu. yd., giving a heaped capacity of 23½ cu. yd. Construction is in ⅜-in. thick steel plate with a 1½-in. hardwood sandwich floor.

★

AIR TRAFFIC CONTROL

New Company Formed in Britain

A NEWLY formed company, General Precision Systems, Limited, Aylesbury, Bucks (formerly Air Trainers Link, Limited) has entered the field of air traffic control systems and equipment for United Kingdom, Commonwealth and European markets. The expansion move is in response to growing interest by governments in the speed of development in systems and techniques in this field in the United States and the critical need for improvement in present air traffic control methods. Arrangements have been made for complete access to the experience of sister companies in the General Precision group in the United States, which are playing a major role in development of new air traffic control systems for the Federal Aviation Agency. Air Chief Marshal Sir John Baker, chairman of General Precision Systems, said that the company had already entered into an agreement with Decca Radar, Limited, for co-operation in the field of air traffic control equipment and expected to benefit greatly from the experience of Decca over the past 10 years in the development of ground, radar and display systems which must play an important part in any air traffic control system. The agreement does not involve the Decca Navigator Company. In addition Sir John said that implementation of the General Precision Systems programme would eventually involve additional collaboration with other major companies in the British and European electronics industry.

Responsibility for the air traffic control activities of General Precision Systems has been placed in a new division of the company, headed by Mr. E. W. Pike, a recognised international authority in this field. Mr. Pike's group will have full access to the capabilities and experience of a staff of over 500 technical personnel currently employed by the General Precision companies in the United States on the air traffic control programme for the Federal Aviation Agency. Teams of technical personnel from General Precision Laboratory Incorporated and from General Precision Systems, Limited, have already exchanged several visits for joint study of air traffic control problems.

THORNYCROFT

MAXIMUM LOAD VEHICLES

The "TRUSTY" maximum load 8-wheeler is manufactured in wheelbase lengths of 18′ 4″ and 14′ 6″. There is a choice of three rear axle drives and other features include a powerful THORNYCROFT designed and built six-cylinder oil engine, all wheel air pressure brakes, hydraulically operated power assisted steering, a five-speed gearbox with optional overdrive, balance beam suspension and first class driving comfort.

One of a fleet of "TRUSTY" maximum load 8-wheelers operated by Shell-Mex and B.P. Ltd. It is equipped with a Works-built cab and a 4,000 gallon "all products" tank by The Steel Barrel Co. Ltd.

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A *It is a tubular rivet assembled on a headed steel mandrel.*

Q In what sizes and materials are 'Pop' rivets supplied?
A *From 3/32" to ¼" dia., in aluminium alloy, mild steel and monel for riveting up to ½" thickness.*

Q What is the operating principle?
A *By means of hand or pneumatic tools the mandrel is drawn through the rivet, forming a head on the blind side and at the same time clenching the sheets together. When the joint is tight the mandrel breaks leaving the rivet head fully formed.*

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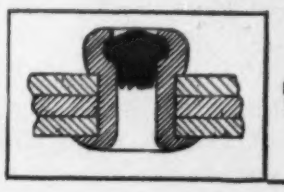
A *Only one side of the structure to be riveted need be accessible, only one operator required, ease and speed in setting, combination of lightness with strength, foolproof and gradual setting action which eliminates any possibility of damage or distortion of the structure.*

Q How do 'Pop' rivets cut costs?
A *They can be set at speeds in excess of 20 per minute by one unskilled operator.*
They facilitate riveting in hitherto unknown inaccessible positions, thereby reducing design costs.



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R.H.A. AT BOURNEMOUTH

Normal User Issue Uppermost

IT was in a mood of understandable satisfaction but qualified optimism when the Road Haulage Association met, in record numbers, for its annual conference at Bournemouth from Monday to Wednesday this week. The dark clouds threatening nationalisation had lifted and it seemed possible that they had been dispersed for good and all; on the other hand there is some apprehension that the nature of railway competition, particularly as regards the rates being charged, and the association is beginning to despair of getting a favourable decision on what constitutes user.

It is thought that it may prove necessary to produce unanswerable evidence of hardship caused to operators who have their user cut down and to present this to the Minister of Transport before what the association considers to be inalienable rights of hauliers are assured. There is one hopeful sign here; the former Minister and his Parliamentary Secretary have expressed themselves ready to look at the issue in so far as it restricts the flexibility of haulage businesses. On the railway issue, the Road Haulage Association would assent to their regaining traffic where possible by fair competition in charges but no more, and if British Railways was to seek to be relieved of any part of its interest burden, road hauliers would feel bound to seek taxation relief.

Five Years of Freedom

Speaking at the opening of the conference, Mr. R. N. Ingram, the national chairman, said that their efforts during the election campaign had helped to prevent nationalisation from being entirely overlooked as an election issue. The association had engaged in public relations activities that had aroused a bitter resentment in the Labour Party. The now-famous television broadcast by Mr. Greenwood was the best development and certainly the cheapest three minutes they had ever had. The Labour slogan was particularly ironic; what they had said in effect was "Britain belongs to you, but your business won't." They now had a period of probably five years, perhaps longer, in which to enjoy freedom from political interference. They must seize this unusual opportunity to examine the problems of the industry undistracted by the antics of the politicians.

Railways and normal user occupied a salient position on the agenda; the association had made constant complaint of the railways freight-charging policies which appeared to disregard the mounting deficits accumulated by the Commission and had drawn attention to the advantages bestowed on the railways to enable them unfairly to compete with road hauliers. They would continue to express their resentment. Support was being given at the present time for two appeals on normal user. The Transport Tribunal had reserved its judgment on this. They gave no hope that authoritative and definite guidance would be given on the meaning of the word "normal." He ended with an expression of gratitude to Mr. Watkinson, the former Minister of Transport, on his magnificent and unprecedented achievements in road-building.

Unfair Discrimination

In the first resolution the conference was urged to seek an end to what is described as the policy of unfair discrimination against hauliers in relation to railways. Mr. D. H. McVeigh (Grimsby) said there were irksome disparities between road and rail overheads. Unlike the railways, for example, road haulage had, since 1944 and despite first a credit squeeze and then a credit stranglehold, largely re-equipped out of its own capital resources. The investment allowance was cut from 1956 to 1959; shipping had retained it at that time to combat flags of convenience. They in haulage had to deal with the flag of inconvenience—that flown by the British Transport Commission. The resolution was carried.

It was agreed that steps should be taken to sustain during 1960 the advertising campaign for the purpose of increasing traffic-carrying to independent hauliers. Mr. W. J. Duckham (Falmouth) said that they were faced with the competition of the railways and British Road Services, both of whom were spending thousands of pounds in publicising their services. The Road Haulage Association for its pre-election advertising campaign had got the foot in the door, and it should now seek to enhance the reputation of its members. Mr. N. T. O'Reilly (Carlisle), vice-chairman responsible for finance matters, asked would someone please suggest where the money should come from. He hinted that the pre-election campaign had not been financed from the proceeds from the special appeal put out. Mr. A. R. Butt (Birmingham) said in his view the only traffic that could usefully be secured was that carried by C-licensees. He was not suggesting any restrictions on that, but he did suggest that their costing systems were sometimes well astray. Mr. A. J. Dale (Stoke-on-Trent) pointed out that the campaign was justified if only because expenditure by road transport in this field fell far below that of other industries.

Closer Liaison Wanted

An appeal for close and regular liaison on all matters relevant to the service of trade and industry supplied by road haulage with the Federation of British Industries, with the Association of British Chambers of Commerce and other appropriate bodies came from Scotland. Mr. A. Ramage (Glasgow) said hauliers were always ready to assist industry in any emergencies such as strikes, but found it often difficult to reach the right spot if they wanted to make recommendations to industry. The only contact that existed between trade and hauliers today was locally from the haphazard and often ineffectual appointment of hauliers to transport committees of chambers of commerce. Nationally, there was an occasional exchange of rather academic interest.

In order to develop co-operation there must be appropriate machinery and a regular need for it. It had applications for many practical purposes, for example, ideas on the handling of goods and restriction of terminal delays. He suggested, incidentally, that by this process they might learn more of what their competitors were doing, especially in regard to rates. The perennial champion of co-operation between small operators, Mr. F. Rudman (Rochdale), again broached the idea. He asked the association to interest itself in helping members to work more closely together. The new co-operative organisation, Road Hauliers (Manchester), Limited, has already received inquiries in respect of 1,500-ton, 5,000-ton and 17,500-ton lots of traffic and he envisaged a time when this type of organisation would be the only avenue open to the smallest operator. Mr. Butt said that if the Manchester company had had the inquiries it was fairly certain that clearing houses had had them also, and it would be merely a question of who quoted the lower rate. They would not like to see the Road Haulage Association going nationally into such a set-up, which would not be in the best interest to the small man. The resolution was lost.

Clearing Houses

A similar fate was suffered by another resolution of recurring character that clearing houses be licensed. Mr. J. Hewson (Howden) wanted a committee set up to consider the practical problems and to make recommendations to the Ministry of Transport. He recalled that Mr. J. W. Ellis, the immediate past president of the National Conference of Road Transport Clearing Houses, had himself supported a licensing proposal. Mr. Dale suggested that they should embark on a restriction scheme with new entrants being approved by long-distance members of the Road Haulage Association. This suggestion was only narrowly defeated, but the original resolution was heavily defeated.

Gross Vehicle Weight Taxation

The conference this year committed itself, although only on a very narrow vote, to a new system of taxation based on maximum gross vehicle weights. Introducing the resolution, Mr. T. E. Weatherhogg (Birmingham) said that only maximum capacity vehicles were not overloaded today. He would like to see new prototypes submitted to the Ministry of Transport and overload tests applied to them. The present basis of taxation was just not good enough moreover for motorway operations. Mr. Butt said it was not so much an attempt to find some way to curtail overloading as to bring some sense into the present system. Also passed were two resolutions which have appeared before on the keeping of diesel oil records as unreasonable, and that employers should be relieved of their present onerous liabilities under section 16 of the 1933 Act. On this latter point Mr. Ingram said that they had some reason to believe that their views had been made known to the licensing authorities via the Ministry.

Renewed approaches are to be made to the Government to restore what the Road Haulage Association considers to have been the original freedom of the A-licence holder under the 1933 Act. Mr. F. Wheeler (London) thought the basic point was whether a restricted industry could effectively serve a flexible and expanding country. Mr. C. Collins (Birmingham) recalled that the Parliamentary Secretary had said that licensing was never intended to impose rigidity on the industry. If the A-licensee was, as he was defined in the Act, a public haulier, why put a fence around him? With the prospect of a five-year reprieve, added Mr. Butt, this problem of normal user was probably the most important single issue they had to grapple with.

Security Methods

Members were treated to an entertaining lecture on better security methods on Tuesday afternoon by Chief Superintendent E. Daws of Scotland Yard. He pinpointed the mounting seriousness of the situation, showing that 2,000 lorries with their loads were stolen in the Metropolitan area alone in the first half of this year, compared with 1,600 in the first half of last year. Thieves were always in a hurry, he said, and delaying measures were one very good solution. The vehicle security committee of the Road Haulage Association was, he understood, arranging an exhibition in London in December of security devices for road vehicles; for example, there were 13 engine immobilisation devices available. He pleaded with hauliers to remove ignition key numbers from the dashboard switch. Just to show what could be done, one London carrier whose sub-contractors lost 450 packages, valued at £8,000 in 12 months had lost only five valued at £335 from his own vans.

Brains Trust

The Brains Trust or Transport Forum again had a great popular success this year but the transport flavour was sadly lacking. This was inevitable with three politicians crowding the panel of four, which was again genially presided over by Mr. Freddy Grisewood. The three politicians enjoyed themselves and vastly amused the audience but the leavening of expert knowledge represented last year by a technical and a legal member was absent.

Invited to give their views on whether the small man was likely to be squeezed out by amalgamation, Mr. Hugo O'Hear, who is a broadcaster, said that tidy groups operating in tidy spheres were superficially very attractive but a little untidyness was worth putting up with if genuine competition thereby survived.

What was to be done about the continuing large deficits on the railways? Mr. Charles Curran, M.P., said the effective test to see if people really wanted the railways was to ask them to pay the full economic cost. To those who thought this idea shocking the alternative was that deficits should be partly met by increased taxation, but whence? There was a case for confronting the public with this choice. Mr. Mark Hewitson, a Socialist M.P., who apparently enjoys a gaff, delighted his hearers by remarking that the solution was to work the railways like you would a private enterprise corporation. He would not start paying interest until it was earned—this sounded remarkably like welshing on one's bargain, said Mr. Curran.

Venue of Conference

There are mounting indications that fewer resolutions or even no resolutions, but more speakers and the popular transport forum would please the majority of members in future years, especially since pressing topics are likely to be fewer. The Road Haulage Association is not apparently committed to alternating between Bournemouth and Blackpool, which venues are at present inevitable because of the size of the attendance, but has put out a questionnaire asking whether members would prefer a different locale each year even though it meant restricting the attendance. In those circumstances it might be necessary to substitute a running buffet tea for the annual banquet. However, the present intention is to hold next year's conference at Blackpool.

★

YUGOSLAV BUSINESS COVER

Five-Year E.C.G.D. Credit

IMPROVED cover for Yugoslav business is made available by the Export Credits Guarantee Department, which is now prepared in appropriate cases to insure capital goods business with Yugoslavia on terms of credit extending to five years from date of shipment instead of the earlier three-year term. E.C.G.D. liability under this new cover will be 75 per cent of loss for all risks covered, as compared with the normal liability for capital goods business of 85 to 90 per cent.

This relaxation is intended to enable United Kingdom manufacturers of capital equipment to continue to compete for business in Yugoslavia now that the recent U.K. Government loan is fully committed. Loans under four separate agreements were made over the period 1949-51 to a total of £17 million and a further loan of £3 million was made in February, 1959, all for the purchase of U.K. goods.

Co-operating in the
Southern Region Electrification

WESTINGHOUSE
SIGNALLING

Extensive signalling installations recently brought into service include Barnes on the Waterloo-Richmond Line, and Beckenham Junction, Shortlands and Chislehurst on the Herne Hill to Swanley section of the Kent Coast Lines.

BARNES CONTROL PANEL

BARNES and CHISLEHURST are O.C.S. installations, BECKENHAM and SHORTLANDS are of the push-button type.

ALL THESE INSTALLATIONS WERE SUCCESSFULLY COMPLETED BY AGREED DATES.

BECKENHAM JUNCTION CONTROL PANEL

AND

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BRAKES

ON THE NEW MULTIPLE STOCK for the Kent Coast Electrification. Fifty-three of these 4-car express electric units mostly completed at Eastleigh Works are fitted with Westinghouse Electro-Pneumatic Brakes of the latest improved type.

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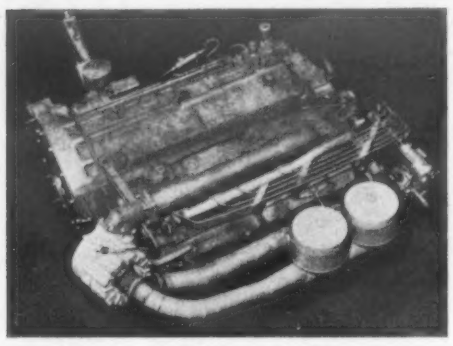
COACH DESIGN FOR THE MOTORWAY

Details of B.M.M.O. Vehicles for M1

SEVERAL coach operators will be using the London—Yorkshire motorway on its London—Birmingham portion practically from the opening. Among regular services an application has just gone in for the London—Blackpool joint route of Ribble, Standerwick and Scout, for example. The Birch London—Bedford service will also be supplemented by a number of journeys non-stop between Bedford and East Finchley in 86 min. via the motorway. The Birmingham and Midland Motor Omnibus Co., Limited (Midland "Red") has distinguished itself for its early application for a licence and for the design of a specially modified vehicle for the operation. A special journey will be operated immediately public traffic is permitted on the motorway on November 2, but a regular public service between London and Birmingham (in 3 hr. 25 min. in lieu of 5 hr. 20 min.) will begin with the 1.30 p.m. departures from either end on that day.

Details of Power Plant

The CM5 high-speed 34-seat coach is a modification of the company's well tried C5 integral



Underfloor engine and C.A.V. exhaust turbo-charger

long-distance vehicle. The S14 horizontal six-cylinder underfloor engine is used. It is a direct-injection type with 4.45-in. bore and 5.25-in stroke, giving a capacity of 8 litres. A C.A.V. exhaust turbo-charger is fitted and the power output is 130 b.h.p. at 1,800 r.p.m. The maximum torque of 440 lb./ft. is developed at 1,200 r.p.m. Transmission is through a single dry plate clutch 15⅞ in. in diameter. The gearbox is the B.M.M.O. DB5 constant mesh type. The gear ratios are 4.968, 2.74 and 1.617 to 1, with a direct top and a 0.73 to 1 overdrive. The reverse ratio is 6.429 to 1. A fully floating back axle with hypoid bevel drive is employed and the ratio is 4.44 to 1.

This combination of power unit and gear ratios, with 9.00 by 20 tyres (12 ply at front and 10 ply at rear) has enabled speeds of 85 m.p.h. to be attained on the Lindley test track of the Motor Industry Research Association for experimental purposes. In practice speeds need not exceed 60 m.p.h. and the fuel racks are adjusted so that 72 m.p.h. will be the maximum. At that speed the coach runs extremely smoothly even on rough surfaces and on a winding course. The noise level is low, partly owing to ingenious insulation and partly through the cutting down of engine speed by the overdrive.

For sustained high performance in public service not only is sustained power output necessary, but adequate suspension and first-class brake power are vital. On the CM5 coach the front wheels are independently sprung and both front and rear are equipped with the variable rate rubber suspension that has proved so satisfactory in the past. It gives an excellent ride. The brakes on both front and rear wheels are hydraulically operated disc type with continuous flow servo assistance. There is also a disc type transmission handbrake. This equipment has stood up to many experimental emergency stops from the highest speeds on the M.I.R.A. course and in our own experience provides a very smooth and efficient stop from fast running.

Marles double cam steering is employed, a ratio of 28.5 to 1 being used. A 35-gal. fuel tank is fitted and the batteries are of 135-amp.-hr. capacity. There are four 6-volt units to give 24-volt starting and lighting circuits. The overall length of the vehicle is 29 ft. 9⅝ in., the overall width 8 ft., and the wheelbase 16 ft. 4 in. The front overhang is 5 ft. 11½ in. and that at the rear 7 ft. 6½ in. A feature of the coach in service is the excellence of its road-holding in heavy cross-wind conditions.

Bodywork

As already mentioned, attention has been paid to the noise level in the bodywork; special care has been given to the tracking down of the way in which noise is reflected in the body and this has led to provision of an acoustic board ceiling which plays a considerable part in deadening road and engine noise. Equal care has been given to the development of satisfactory ventilation and to the avoidance of the twin bugbears of draughts in winter and stuffiness in summer. In the search for simplicity it has eventually been decided to use a system capable of rapid modification which provides different air flows for summer and winter conditions, with coverage of a wide range of change intermediately.

Rounding the banking on the M.I.R.A. ground at Lindley at 82 m.p.h.

Ventilation

There are 12 side windows with Hallam, Sleigh and Cheston pans; each is surmounted by an Auster hopper type ventilator. Coupled to these are deflector plates which exclude draught in winter but in hot weather can be removed to give a considerable circulation of air in the upper part of the coach, over passengers' heads; these achieve a pleasant effect of fresh air without an uncomfortable flow. The circulation is aided by two Smith's fans in the front bulkhead; these have two speeds under the driver's control. Ventilation can be stepped up further by using an extractor fan mounted in the rear canopy. Air is scooped by the fans from under a cowl at the top of the driver's screen and the efficiency is such that the vehicle can be cooled even when standing in hot sunshine. It is a near approach to the full air conditioning.

The B.M.M.O. CM5 coach for motorway service: Looking to the rear and forward in the saloon and, right, the handsome lines of the exterior

For heating there are three Clayton Dewandre recirculatory units and demisters are fitted to the front screens. The front end has an Auster lantern type windscreen which, although handsome in appearance, uses straight flat glass sheets. The seating is by means of coach-built seats with a leopard skin upholstery pattern. Each is equipped with a "barber's chair" type of adjustable headrest which offers a good choice of position to passengers who prefer a support for their head. A Nicholls paper rack with nylon cord net and a Widney ash tray are mounted on each seat back. A toilet compartment is provided at the nearside rear of the vehicle with closet and aseptic tank. There is a small glass fibre wash basin ingeniously contrived in the space; a roof-mounted tank contains the necessary water supply. The unladen weight of the coach is 6 ton 13 cwt. 1 qr.

Midland Motorway and St. Albans By-pass

(*Continued from page 3*)

and men were housed at Letchworth, Bedford, Baldock, Rugby, Leighton Buzzard, Aylesbury and elsewhere in lodgings. Double-deck buses brought them to work each day and took them back in the evenings. Canteens were in operation at all site offices and every 2 to 2½ miles along the motorway. Mobile canteens were also in operation.

Communications

Radio communications were in operation for Laing over the whole motorway. There were seven master shortwave radio sets and 80 subsidiary shortwave radios and field telephones. Not only were these sets used for mobile and static control, but also for calling up plant, plant spares and transport from the contractors' main plant and transport depot at Borehamwood. A Bristol five-seat Sycamore helicopter was used for supervising work along the 55-mile route of road construction, and a complete visit to all works along the route could be made in a matter of hours.

Out of a total of 130 miles of temporary fencing, 90 miles was completed within three weeks. Permanent fencing then had to be erected in replacement; three shiploads of timber were needed for this job. The area enclosed by the fencing is 1,500 acres; this work involved the production by the consulting engineers of some 12,000 land maps for the acquisition of land for the motorway. In many cases existing access roads have been widened and strengthened to enable extra wide lorries with heavy loads to reach operations on the new highway. Gas, electricity and water supplies, and other services, have had to be diverted in a number of places where cutting and bridge construction for M1 would otherwise have severed them. The co-operation received from local authorities was most valuable and, without their help, progress would have been held up. Pylons carrying high-tension cable have had to be dismantled where they were in the path of the motorway and re-erected elsewhere. No fewer than 17 miles of subsidiary and access roads have had to be built, realigned or resurfaced. Over six miles of diversion roads were required; Bailey bridges were erected for diversion roads and across rivers, canals and streams.

Construction

Earthmoving by the most modern earthmoving equipment quickly got under way in the spring of 1958, and with the aid of 73 scrapers, both of the crawler-tractor and scraper and self-propelled rubber-tyred types, some 150 excavators and one elevator loader-excavator together with a team of dump trucks, an average 450,000 cu. yd. was being shifted each week. To keep all the plant moving required a systematic fuel delivery rota direct to the plant where is was working on site. In total 6 million gal. were needed and 70 per cent of this was needed between April and December, 1958; the allocation was 5 million gal. gas oil; 750,000 gal. petrol; 45,000 gal. diesel fuel; and 4,000 barrels or 1,500,000 pints, of lubricants.

For production of concrete for structures and marginal haunches there is a number of depots. Each set-up usually comprises one or two small mixers up to 21/14 size, fitted with integral weighing gear and hand-scraper units for loading sand, gravel, or stone aggregates from ground level stockpiles. Cement is delivered in pressurised lorries and stored in silos ranging from 10 to 30 tons in capacity. After mixing, concrete is transported to the structures by small dumper, monorail, compressed air placers or by crane and skip.

The dry lean concrete base course for the motorway is mixed in nine Koehring 34E twin-batch mixers and four other continuous mixing plants. The majority of these plants has a target output of 3,000 cu. yd. of cement weekly. The twin-batch mixers are charged from a specially adapted Blaw Knox weighbatching plant consisting of a two-compartment high-level storage bin, one compartment containing all-in ballast and the other cement. The ingredients are dropped into a weighing hopper The 35-ton cement compartment is charged by a pressurised cement lorry, whilst the all-in ballast compartment is loaded by a ¾ or ⅞ cu. yd. dragline. After mixing the concrete is transported in standard tipping lorries to Blaw Knox PF90 paver-finishers which lay the material in two compacted 7-in. layers to give a completed thickness of 14 in. Final consolidation and finish is achieved by 6-8 tandem rollers and small vibratory rollers.

New Concrete Techniques

The 17 miles of dual carriageway which form the southern part of the motorway, in the form of the St. Albans by-pass, have been built mainly by Tarmac Civil Engineering and have reinforced concrete carriageways. In Britain the concrete road has, in the past, often taken second place, despite the argument that once it is built the subsequent expenditure on maintenance is negligible. To the vehicle user the necessary joints in concrete roads have made themselves felt hitherto by their very regularity, while to the engineer the design and supervision of construction of concrete roads has presented problems, since to obtain satisfactory riding qualities has, in the past, required greater care than in other forms of road construction. Even then this additional care paid economic dividends in the long run, but now new plant and modern techniques of construction have, it is claimed, solved the problems.

No longer will the driver be aware of the regular expansion joints in the concrete, since a new technique has been developed whereby the concrete carriageway is laid in a continuous strip, like toothpaste from a tube, and only after the concrete is hard are the joints made by sawing with a concrete saw. Nor is joint sawing the only novel item. The construction work on the St. Albans by-pass was divided into two contracts, and on both, the contractors used a considerable amount of ingenuity to improve their constructional techniques. On Contract 1 a completely new machine was developed to produce the final riding surface. This machine, the Shavian finisher, has produced a greatly improved riding quality.

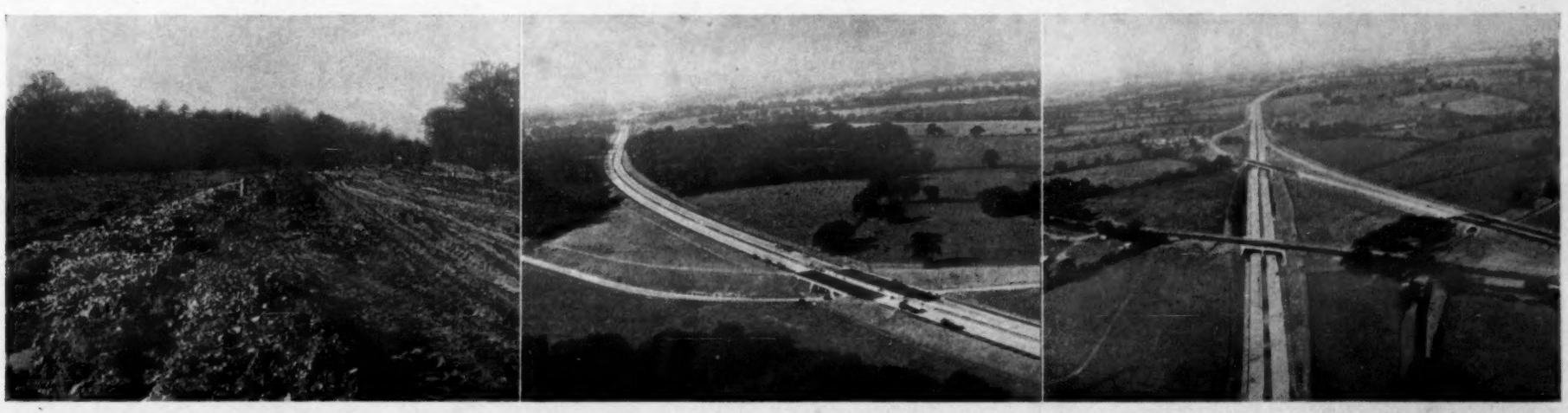
On Contract 2 a modification of construction methods allowed the contractors to set up a new record rate of highway paving by laying 1,200 ft. of reinforced concrete road, 26 ft. wide, in 11 hours. Speed of construction is important and rates of progress such as this have permitted about half of Contract 2 to be opened to traffic on November 2 although this contract was not scheduled for completion until the New Year. On both contracts, the engineers specified that the surface of the concrete should be lightly brushed while still wet to give a texture which still further improves skid resistance and gives a pleasant appearance in daylight, while in no way interfering with the reflection properties which allow concrete roads to give such good visibility and therefore greater safety at night.

St. Albans By-pass

The St. Albans by-pass has been designed with a maximum gradient of 1 in 30 on the main road and 1 in 25 on the Luton link. In general, side slopes are at 1 in 2 with rounding at the top of the cuttings and at the foot of embankments. The maximum depth of cutting is about 25 ft. and the maximum height of embankment about 30 ft. The minimum radius on the motorway, excluding junctions, is 1 mile and the carriageways are designed for a speed of 75 m.p.h.

From its northern end to where it divides into two legs the road has two 38-ft.-wide carriageway slabs each with an 18-in.-wide white strip at the outer edges, separated by a central reservation of 13-ft. width. Beyond the carriageways there is an 8-ft. wide hard shoulder on either side. The lay-out of the two legs is similar but with 26-ft. carriageway slabs. The same widths have been adopted on the Luton link.

The motorway carriageways are of reinforced concrete, 11-in. thick laid on a sub-base of 7-in. minimum thickness. Reinforcement comprises one layer of steel-mesh reinforcement 2½ in. below the surface.



On the St. Albans by-pass: Frightful weather conditions during the summer and autumn of 1958 show in this view at Beechtree; by contrast, the present-day scene at Beechtree; and right, the flying junction looking north where the two legs of the St. Albans by-pass join, with the St. Albans—Hemel Hempstead A414 road crossing the motorway in the foreground

NEW HEADQUARTERS FOR B.T.C. POLICE

Part of Reorganisation Scheme

A NEW British Transport Commission Police headquarters, which has been established at Park Royal in north-west London, was, as already announced, opened on October 15 by Mr. K. W. C. Grand, a member of the British Transport Commission and chairman of the Commission's Police Committee. The new headquarters are housed in a modern building, specially adapted for the purpose, with accommodation for the chief constable, Mr. Arthur C. West, and headquarters staff for the whole B.T.C. force, which has a total establishment in the country of about 3,000 men and women, and which was originally based on the former railway and London Transport police forces.

The new headquarters of the British Transport Commission police

Mr. West, formerly chief constable of Portsmouth, was appointed chief constable of the B.T.C. Police last year with a special responsibility for the reorganisation of the force in accordance with the Commission's policy. The establishment of the new headquarters is an important part of the reorganisation. The centralisation of the administration and investigation departments is another important feature. The number of C.I.D. staff, for example, dispersed through the six regions of the force in England, Scotland and Wales, has been redeployed and certain important functions which require attention on a national basis will be supervised by Mr. W. O. Gay, as chief of police (crime) at headquarters, with Mr. Melbourne Phillips, formerly chief detective superintendent at Bristol, as assistant chief of police. The C.I.D. staff at headquarters includes officers of all ranks specialising in various types of crime, who will be available to advise local detective staff of the force as required and to give actual assistance on the spot if necessary.

A Focal Point

Centralisation of some aspects of the administration and investigation work will enable the chief constable to implement fully and effectively the Commission's policy with regard to the general work of the force. It is hoped, for example, that the provision of a focal point for the activities of the force and a better distribution of manpower in the most important areas will bring greater efficiency and give a better service to the public and to the various undertakings of the Commission. In the near future, as a further stage of the reorganisation, new area headquarters are to be opened in Manchester and Bristol for B.T.C. police.

SCOTTISH SALESMANSHIP

Coach Trip to Dried-up Reservoir

SALESMANSHIP in bus travel was always one of the attributes of the earlier busmen. In the days of cut-throat competition they had to outsell their rivals to exist. Much of the excitement and flavour has gone from the industry since those days and it may be that with the advent of television and the growth of the private car we have been a little complacent and been content to wait for business to come along.

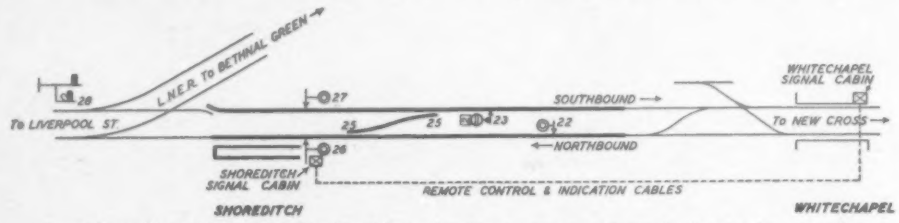
It is all the more refreshing, therefore, to record a successful operation by Scottish Omnibuses which had all the hallmarks of originality. In one week the company carried 2,000 passengers from Edinburgh to Talla Reservoir, a distance of 40 miles, to give the public an opportunity of seeing the effects of the drought on one of the city's main reservoirs. At a time when Edinburgh's water supply was being rationed for the first time in living memory it was supremely topical, and it held the element of novelty. People could see for themselves the bed of the reservoir; it had the additional advantage to the city water authority that it brought home in striking fashion to the public the seriousness of the position. Furthermore, the excursion proved, beyond any doubt, that bus travel can still be sold.

L.T.E. UNDERGROUND RAILWAY MODERNISATION

Progress in Signalling Works

A FURTHER step towards the £2,500,000 modernisation and improvement plan for the London Transport District Line was taken last week when colour-light signalling of the London Transport standard two-aspect type was brought into use on 2½ miles of the two local tracks running from east of Bow Road to a point between Plaistow and Upton Park. The alteration was carried out on the night of October 3 ready for the start of traffic on the morning of Sunday, October 4.

In addition, the junction between the London Transport lines and those of the Eastern Region at Campbell Road (between Bromley and Bow Road stations) has been taken out of use and the points are to be removed. The junction with the London Midland North London line has also been cut. The signals and points at Plaistow and Bromley will eventually be remotely-controlled from a new London Transport signalbox now being equipped at Barking. Until this box is ready for use the points and signals at Plaistow will be controlled from a temporary panel installed at that point, and the crossover at Bromley will not be used.



Layout at Shoreditch, East London Line, showing arrangements made during the war when remote-control from Whitechapel was installed

Track Segregation

On the completion of the Barking flyover works by the Eastern Region, the London, Tilbury and Southend Line and District Line tracks will be segregated as far as Upney and London Transport signalling will be brought into use on the District tracks. The remaining section of local tracks (i.e. from Upney to Upminster) will be similarly resignalled and re-equipped as required before transfer to London Transport control at a later stage.

When all the works being undertaken by the Eastern Region of British Railways and London Transport are completed, the 12¼ route-miles of local tracks used by District Line trains between Campbell Road junction and Upminster will be completely segregated from the tracks used by the through trains of the Eastern Region. Responsibility for power supply to the tracks used by London Transport was transferred from the Eastern Region to London Transport in 1955. A new substation is already in use at Upminster and another, at Plaistow, is now being equipped.

East London Line

Improved signalling arrangements for Whitechapel and Shoreditch stations on the East London Line were brought into use by London Transport on Sunday, October 18. At both Whitechapel and Shoreditch special control arrangements now enable the reversing of trains to be carried out automatically, the points and signals setting themselves in a prearranged sequence started by the movement of the trains themselves. Trains run to Shoreditch in the peak hours only and are reversed at Whitechapel at other times. The automatic reversing feature—for which provision is already made at certain other London Transport stations—is brought into use at either Shoreditch or Whitechapel by turning an appropriate switch in the Whitechapel (District Line) signalbox and thereafter, in normal circumstances, needs no further action by the signalman.

The signalman at Whitechapel can take control of the signalling at the two East London Line stations at any time, should special train movements be required. He uses a new push-button remote control panel fitted in his box and follows the train movements as displayed on an illuminated diagram. The push-buttons are each arranged to set up a particular route for a train and are automatically restored to the normal position when the train has passed over the route concerned. A second route can be set up and stored until movement over the first is completed, when the signals and points will automatically be arranged for the stored route. The signalling at Whitechapel (East London Line) was previously controlled by a mechanical locking frame many years old. This has now been taken out of use and the mechanically-operated points associated with it have been converted for electro-pneumatic operation. The signalling at Shoreditch was formerly remotely-controlled from Whitechapel (East London Line) signalbox, but could be operated locally at Shoreditch if required. Shoreditch is now completely supervised from Whitechapel (District Line) signalbox.

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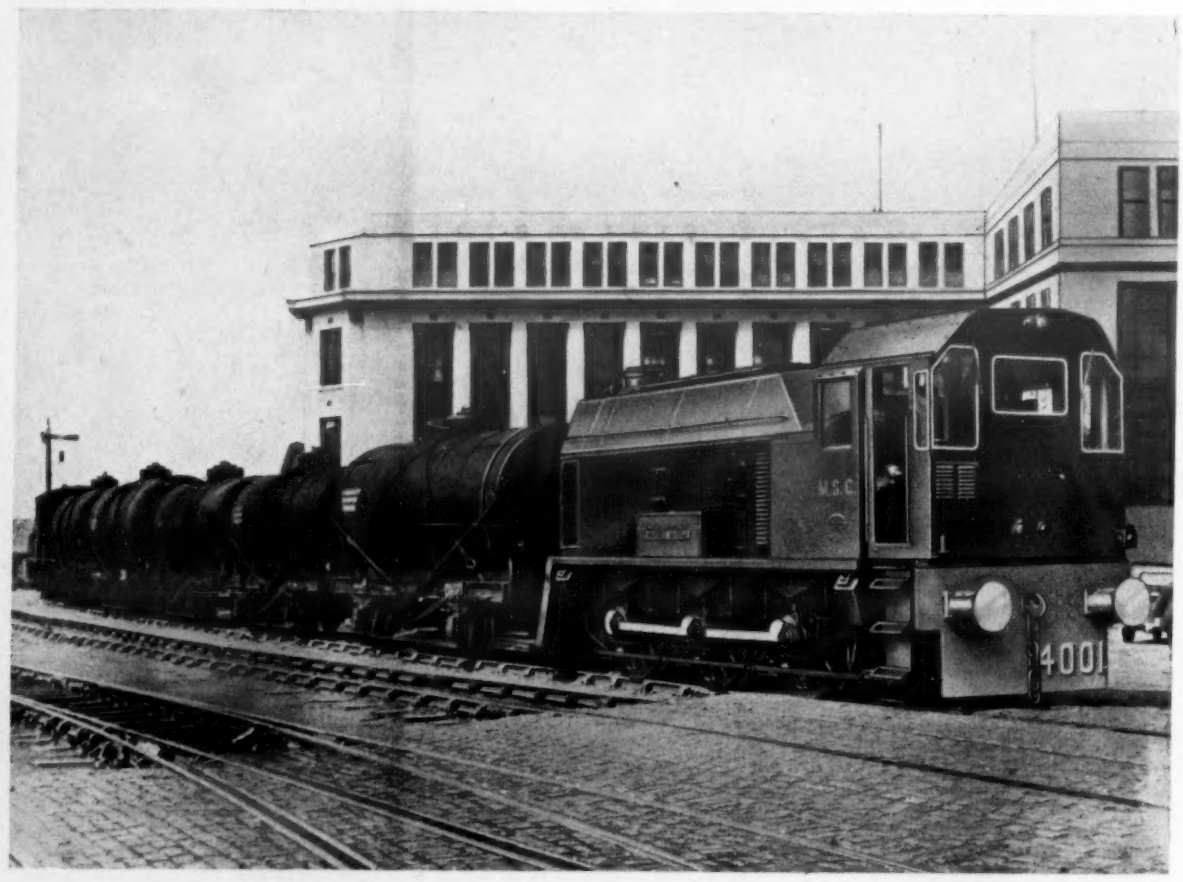

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SOCIAL AND PERSONAL

Parliamentary Secretaries Announced

IN a series of ministerial appointments announced last week to complete the new Government, Lord Chesham will represent the Ministry of Transport in the House of Lords as Joint Parliamentary Secretary, while Mr. Airey Neave, hitherto primarily responsible for civil aviation matters, will continue as Joint Parliamentary Secretary to the M.o.T. in the Commons. Mr. G. R. H. Nugent, his co-partner there, has left the Government. The Parliamentary Secretary to the new Ministry of Aviation is Mr. A. G. F. Rippon.

* * *

Mr. G. W. Miller has been appointed district motive power superintendent, Derby, London Midland Region, B.R.

* * *

Mr. C. P. Millard has been appointed district goods manager, Liverpool, London Midland Region, B.R.

* * *

Field-Marshal Viscount Montgomery of Alamein, K.G., G.C.B., D.S.O., will be the speaker at the annual anniversary luncheon of the Institute of Transport on November 3. The function this year marks the 40th anniversary of the foundation of the institute.

* * *

C.A.V., Limited, announces the appointment of Mr. A. E. W. Austen, B.Sc., Ph.D., A.M.I.E.E., F.Inst.P., as chief engineer. Mr. Austen, who has been chief research engineer of the company since 1946, graduated in physics at the Royal College of Science, University of London, in 1933, and obtained the degree of Ph.D. in 1936. In 1935 he joined the staff of the British Electrical and Allied Industries Research Association. During the 1939-45 war he was seconded to the Telecommunications Research Establishment and worked on radar. He joined C.A.V. in 1946 in order to develop the research department, which he has built up to its present strength. It deals with a wide variety of subjects including diesel combustion, fuel-injection equipment and filtration, and problems arising from the electrical side of the company's business. Mr. Austen has made a special study of the techniques of fuel-injection systems, both from the experimental standpoint and from theoretical and mathematical considerations. Latterly he has been concerned also with administrative matters including the applications of large digital computers to both technical and commercial problems.

Mr. A. E. W. Austen

* * *

Brigadier C. A. Langley, Chief Inspecting Officer of Railways, is to visit India at the end of November and in December will join in the intermediate meeting in Delhi of the Permanent Commission of the International Railway Congress Association.

* * *

The Institute of Petroleum announces that a paper, "Oil and Transport," will be presented by Mr. W. S. Ault, B.A., F.Inst.Pet. (Shell-Mex and B.P., Limited) at a meeting to be held at 61 New Cavendish Street, W.1, on November 4. It will show the rate of development in the industry in the past and attempt to forecast future trends in the light of economic, technical and fiscal pressures.

Standing by one of its enormous front wheels, Col. P. McA. Sinclair, a director of Richard Costain, Limited, congratulates Sir William Black, chairman of A.E.C., Limited, on his new 18 cu. yd. A.E.C. Dumptruk. Col. Sinclair was taking delivery of the first six of these trucks (see page 11).

Mr. G. H. Hinds, O.B.E., electronics advisory officer to the British Transport Commission, has been elected a member of the council of the British Computer Society. Mr. Hinds has been a member of the society since its formation.

* * *

As a result of a reorganisation in the general manager's department of the Eastern Region, the posts of principal assistant to general manager and general assistant to general manager have been abolished. As has already been announced, Mr. O. R. Smart, formerly principal assistant to general manager, is now supplies and contracts manager, Eastern Region. Mr. C. E. Whitworth, formerly general assistant to general manager, has been promoted to the new position of assistant to general manager.

* * *

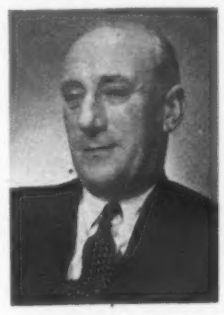
Liverpool Transport won both the Stirk trophy (for men) and the Lewis cup (for women) in the first-aid competition arranged by the National Road Passenger Transport Ambulance Association and held this year at the London Transport Aldenham works. London Transport teams were second in both competitions. This is the 21st anniversary of the competition for the Stirk trophy and a simple commemorative booklet has been produced. It recalls that the idea of a national competition was initiated with a letter from the London County Council Tramways to the *St. John Ambulance Gazette* in 1930. The Association was formed in 1933, but there were no competitions in 1940-46.

Exide Motor Show Lunch

WELCOMING the usual large gathering of guests to the annual Exide Motor Show Press Luncheon on October 21, Mr. A. W. Browne, chairman, Chloride Batteries, Limited, reviewed his company's activities in the field of research. Over the past few years, he said, much time and money had been devoted to research and recently a new well-equipped 40,000 sq. ft. laboratory, with a staff of 180 engaged in both fundamental and applied research, had been completed. This laboratory was now in operation, although the official opening would not take place until the new year. Commenting on a recent accusation that research into the storage battery had been neglected, Mr. Browne said this was quite untrue. For example, the output of aircraft batteries of a given weight had been doubled over the past 15 years, modern traction batteries had 30 per cent greater capacity for a given size and weight while vehicle starter batteries had been given a 50 per cent increase in life. Mr. Alex Bruce, editor, *Motor Industry*, in replying for the press, congratulated the company on this, their 25th such function. Mr. G. E. Liardet, chairman and managing director, Simms Motor and Electronics Corporation, Limited, replied for other guests.

* * *

Mr. F. L. Lambert, B.Sc., M.I.C.E., assistant civil engineer, has been appointed chief electrical project officer, London Midland Region, B.R. This is a newly created post and Mr. Lambert will be responsible for progressing and co-ordinating on the ground the work of all departments concerned in the electrification of the Euston—Crewe line, so that it will be completed by 1964. Mr. Lambert studied civil engineering at University College, London, where he graduated with first-class honours and was awarded the Vernon Harcourt prize for civil municipal engineering. Beginning railway service in 1929 with the former Great Western Railway, Mr. Lambert served under the divisional docks engineer at Newport and Cardiff, and the divisional engineers at Wolverhampton, Taunton and Gloucester. In 1946 he was appointed assistant divisional engineer, Cardiff, and two years later transferred to Neath, and subsequently to Cardiff in similar capacities. He was appointed acting divisional engineer, Abergavenny, in 1949, district engineer, Shrewsbury, in 1951 and district engineer, Newport, in 1952. Mr. Lambert became assistant engineer (works maintenance), Paddington, in 1955, and was appointed assistant civil engineer, L.M.R., in February this year.



Mr. F. L. Lambert

* * *

Lord Gifford has been appointed an additional director of B.E.T. Omnibus Services, Limited.

* * *

We regret to record the death of Mr. L. H. Joslin, assistant commercial officer (mineral), Eastern Region, B.R.

* * *

Mr. D. F. Goulder has been appointed sales manager of the marine and industrial division of A.E.C., Limited.

* * *

The annual staff dance of Leeds City Transport is to be held at the Capitol Ballroom, Meanwood, on March 18 next year. This is a function which is attended by many members of the motor industry trades.

* * *

Mr. M. G. Cohen is taking up residence immediately in the United States as a vice-president of George Cohen 600 Incorporated, of 30 Church Street, New York. This is the American company of the well-known British group, George Cohen Sons and Co., Limited.

* * *

Mr. J. T. Turner has been re-elected chairman of the vehicles committee of the National Road Transport Federation, an office he has held since 1956. Mr. K. C. Turner, president-elect of the T.R.T.A., was elected chairman of the highways committee of the N.R.T.F.

* * *

The Yorkshire Traction Co., Limited, announces that Mr. R. E. H. Braithwaite, B.A., A.M.I.Mech.E., assistant engineer of the East Kent Road Car Co., Limited, has been appointed chief engineer of Yorkshire Traction in the place of Mr. J. N. Barry, who is retiring. Mr. Braithwaite takes up his new appointment on January 1.

* * *

Members of Area C of the Municipal Passenger Transport Association met in Salford on October 22 and were entertained to luncheon by the Salford City Transport Committee. In the afternoon the party visited the Patricroft works of Norris, Henty and Gardners, Limited, and was much impressed by the quality control in the building of Gardner diesel engines.

* * *

Mr. F. E. Russett, hitherto managing director of Western Transport, Limited, has been appointed managing director of Alma Garages (Bristol), Limited, with effect from November 1. He retains his seat on the board of Western Transport, Limited, and Mr. G. W. Tyler, director, Western Transport, Limited, succeeds Mr. F. E. Russett as managing director of that company.

* * *

Mr. J. G. Arnold, hitherto divisional traffic officer, Pickfords Division, B.R.S., has been appointed assistant heavy haulage manager, Pickford Division. Mr. A. J. Boys, Brighton branch manager, Home Counties district, South Eastern Division, has been appointed Home Counties district manager, to succeed Mr. M. F. Horner, A.M.Inst.T., on his retirement. Mr. Arnold was educated at the Merchant Taylors' School and joined Pickfords heavy haulage service in 1950. He became divisional traffic officer of the Pickfords division in 1956. Mr. Boys served an apprenticeship with the Ford Motor Co., Limited, and was later with Trafalgar Transport, Limited. He has held the post of branch manager at Brighton since 1951. Mr. Horner was with the Cadbury-Fry Joint Transport Department at Bournville from 1920 to 1941, became Divisional Road Haulage Officer for the Southern Region, Reading, in 1943 and for the East and West Midlands Region in 1946. He joined B.R.S. in Birmingham in 1948.

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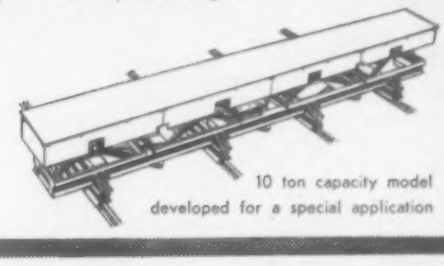
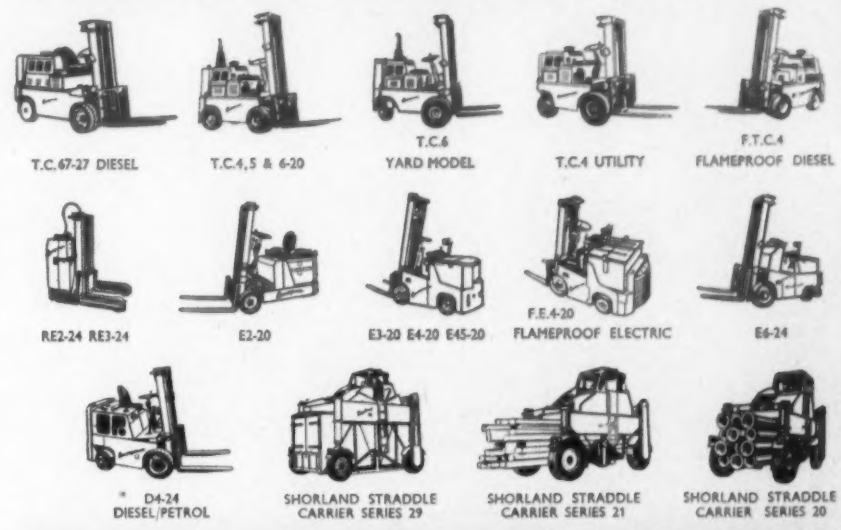


10 ton capacity model developed for a special application



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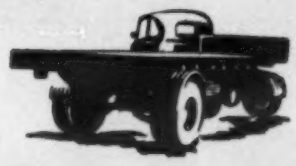

DENNIS

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IMPORTANT CONTRACTS

New Rhodesian Road

AWARD of a £750,000 contract for the construction of 30 miles of main road between Salisbury and Lusaka, near to the Kariba Dam, to Richard Costain (Africa) has been announced. The work consists of heavy earthwork construction through 4½ miles of the Zambesi escarpment, involving the removal of 750,000 cu. yd. of muck and rock, one major bridge of prestressed design, 30 large box culverts and 200 pipe culverts. Work is to start in November and is due for completion early in 1962.

Loline for Middlesborough

Middlesbrough Corporation has accepted the tenders of Dennis Bros., Limited, for eight Loline bus chassis and of Northern Counties Motor and Engineering Co., Limited, for eight double-deck bodies.

Another Leyland for China

A second heavy-duty vehicle has just been ordered from Leyland Motors, Limited, by China National Transport Machinery Import Corporation for trial purposes. A Super Hippo three-axle tractor powered by the Leyland O600 diesel engine, it will be operated with a Dyson 30-ft. 25-30 ton platform semi-trailer. It will be recalled that last year a Leyland Super Beaver tipper and 44-seat Leyland-M.C.W. bus were supplied to China.

Antigua Airport Lighting

Coolidge Airport, Antigua, is to be equipped with a new airfield lighting system supplied by the General Electric Co., Limited. An order worth about £6,000 for runway, approach and taxiway lights, cable and switchgear has been placed with the English company by the Crown Agents for Oversea Governments and Administrations on behalf of the Director of Civil Aviation for the Leeward and Windward Islands.

Recent Commer-Karrier Orders

Among the important orders placed recently for Commer and Karrier vehicles are those for 43 1½-ton forward-control Commer chassis and 74 diesel-engined Karrier Bantam chassis for British Railways, and 124 1-ton forward-control chassis for the Co-operative Wholesale Society, Manchester. British Road Services has ordered 10 10-ton articulated tractors and Relay Exchanges, Limited, has contracted for 18 Express delivery vans.

North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include:

E. Davis (Fixers), Limited, York, for the supply of steelwork for repairs to bridges of Goole.

Arthur Robinson (Contractors), Limited, Middlesbrough, for earthworks and drainage work at Newport (Middlesbrough) new marshalling yard.

The Automatic Telephone and Electric Co., Limited, Liverpool, for installation of a new traffic control telephone system at Middlesbrough Station.

Holmpress Piles, Limited, Hull, for piling work at English Street goods shed, Hull.

A.E.C. Sales in Portugal

Two recent orders for A.E.C. vehicles for oil company work have been placed through the A.E.C. Portuguese distributor, E. Pinto Basto Cia., Ltda., Lisbon. One is for a "batch" of Mandators for tanker and refinery work by Mobil Oil Portuguesa, S.A., already a major A.E.C. fleet operator, and the other for heavy-duty tankers to a value of £60,000 by S.A.C.O.R., a large Portuguese oil company. The S.A.C.O.R. tankers were supplied by Stand Moderno on behalf of Pinto Basto.

New Eastern Region Contracts

The Eastern Region of British Railways announces the following contracts:

B. Finch and Co., Limited, Barkingside, for welded tubular building at Norwich Trowse.

G. Wimpey and Co., Limited, London, W.6, for foundations, drainage and resurfacing approach road, etc., in connection with new warehouse at Norwich Trowse.

Aerocem, Limited, London, W.1, for grouting of slips in embankments at four sites in the Stratford district.

R. G. Horton (Engineers), Limited, Brierley Hill, for reconstruction of portion of superstructure of East Street bridge over down Tilbury and westbound (L.T.E.) lines between Barking and Dagenham Dock.

T. Fletcher and Co., Limited, Mansfield, for reconstruction of bridge over New River between Ware and Hertford.

Carter-Horsley (Engineers), Limited, Waddon, for waterproofing and repairs to two bridges between London Fields and Hackney Downs.

Amersham Station Reconstruction

London Transport announces the placing of a contract with William Old, Limited, Harrow, for alterations to Amersham Station. The work includes the provision of a new roof for part of the northbound platform (which is to become an island platform) and extension of the roof of the southbound platform. The alterations form part of the work required to adapt Amersham Station to its role as the terminus of the Metropolitan Line when the electrification and four-tracking works are completed in 1962. An account of this electrification scheme with diagrams of the layout on the route appeared in our August 15 issue, and Amersham Station was shown in the April 18 issue.

★

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

November 7—Greece.—Ministry of Finance for five four-wheel-drive FORESTRY TRACTORS of about 35 h.p., with EQUIPMENT. Photocopies of tender documents from Export Services Branch, B.o.T., price 5s. (ESB/24999/59.)

November 7—Sudan.—The Sudan Gezira Board for unspecified quantities of HAND PUMP TROLLEYS, MOTOR TROLLEYS, OIL TANKERS, WATER TANKERS and BOX WAGONS. Detailed specifications from the Assistant General Manager (Supplies), The Sudan Gezira Board, Barakat. (ESB/23175/59.)

November 9—India.—Ministry of Railways for TECHNICAL COLLABORATION on the supply and progressive manufacture of 42 25-kW 50-cycle a.c. FREIGHT LOCOMOTIVES in India in the Chittaranjan Locomotive Works. Details from the Director-General, India Store Department, Government Building, Bromyard Avenue, Acton, London, W.3. (ESB/20414/59.)

November 9—India.—Railway Board for 42 25-kV 50-cycle a.c. FREIGHT LOCOMOTIVES, with maximum axle load of 21 tons for 5 ft. 6 in. gauge. Photocopies of tender documents from Export Services Branch, B.o.T., price 14s. (ESB/20937/59.) This is alternative to the item above.

November 10—Korea.—International Co-operation Administration for 11 sets of MARINE DIESEL ENGINES and EQUIPMENT, seven of 280-300 h.p., three of 350-380 h.p. and one of 510-550 h.p. Tenders to the Bank of Korea, Seoul. (ESB/24535/59/ICA.)

November 11—Ceylon.—Ceylon Transport Board for LEAD-ACID BATTERIES, 8,000 6-volt 140 amp.-hr., 1,654 6-volt 220 amp-hr. 200 12-volt 110-amp.hr., 600 12-volt 160 amp.hr. and 500 12-volt 186 amp.hr. Tenders to the chairman, Tender Board, Ceylon Transport Board, Kirula Road, Narahenpita, Colombo. (ESB/23817/59.)

Export Opportunity—Israel.—Israel Engines and Trailers Co., Limited, 23 Hahashmal Street, Tel Aviv, has informed the Commercial Secretariat of the British Embassy at Tel Aviv that it is interested in obtaining United Kingdom agencies for light and heavy LORRIES, DIESEL ENGINES and FUEL-INJECTION EQUIPMENT. (ESB/24356/59.)

SHIPPING and SHIPBUILDING

Labour Scheme Amendments

AMENDMENTS to certain provisions of the dock labour scheme were last week brought to the notice of all registered dock workers by a leaflet in their pay packets. This course was taken to counter "a great many irresponsible statements" made recently about the amendment of the scheme. The changes are primarily concerned with the powers of local boards. They will be given some freedom to delegate disciplinary powers, but with three safeguards: local boards alone can authorise such delegation, and will determine its extent; power to dismiss cannot be delegated to an officer of the board; and right of appeal is fully maintained. Local boards are given no new powers to authorise the engagement of unregistered labour, it is stressed.

Scottish Lochs Cruises

SO successful was the nine-day cruise by s.s. *Duke of Lancaster* through the Scottish Lochs last month (the ship was fully booked) that the London Midland Region is to run two next year—one in May and one in September.

Record Iron Ore Cargo on Tyne

THE largest cargo of iron ore yet to be handled on the Tyne is due in the river on November 2 from Puerto Ordaz. It is 31,000 tons in the Liberian ore carrier, *Ore Regent*, and is believed to be the biggest such cargo ever to arrive in this country. The *Ore Regent* is Japanese built and belongs to Universe Tankships Incorporated, Montovici. It can actually take 44,000 tons of cargo on a draught of 37 ft. 1½ in., but as the depth of the berth at Tyne Dock is only 35 ft. the carrier is not loaded to its full cargo. Its reduced load of 31,000 tons is, nevertheless, 2,000 tons greater than the previous largest on the Tyne.

Gas Coal Diverted to Rail

THE South Western Gas Board is to discuss the decision, criticised in shipping circles, to divert coal supplies from coastwise shipping to rail. The Board is stated to have given a shipping company which has carried coal from the North to four ports in the West of England for 30 years, only three weeks' notice that in future about 150,000 tons of coal would go by rail. The explanation given by the Board for withdrawing its business from the company was that in manufacturing smokeless fuels it was necessary to have certain blends of coal. The Chamber of Shipping was not satisfied with that explanation; it was understood the railways had offered to carry coal at a flat rate.

Scrapping Programme Needed

SPEAKING at Saltburn last week, Sir Nicholas Cayzer, president of the Chamber of Shipping, said: "Soon, if not already, our shipbuilding yards will be hungry for orders—and incidentally I should have thought that there was room for some rationalisation on an international basis in the shipbuilding world because present output is at a rate big enough to replace the entire world fleet every 12 years." The time when scrapping must be accelerated was near, said Sir Nicholas; among the ships of various flags laid up were 232 of nearly one million tons gross built before 1934, and 642 of nearly five million tons gross built between 1942 and 1945. "If only we could find a way to get rid of these ships, how much better off we should be," he added.

Shell to Absorb Eagle Fleet

ACQUIRED about three months ago by the Royal Dutch Petroleum Company and the Shell Transport and Trading Co., Limited, the Eagle fleet, which consists of 23 deepsea tankers, is to be integrated with the Shell fleet from the end of the year. The largest tankers measure 32,000 tons deadweight. The decision to integrate was taken because after very careful consideration it has been found impracticable to continue the existence of the Eagle fleet as a separate entity on a basis consistent with its history and tradition. It has therefore been decided that from midnight, December 31, the Eagle fleet will be operated by Shell and the Shell house flag will be flown. As far as practicable the unity and present management of the Eagle fleet will be preserved within the Shell organisation.

O.T.D. News

AMONG the definite achievements of Ocean Travel Development since its formation in August, 1958, have been the universal adoption last May of 20 per cent deposit on bookings, and the preparation of a standard form of application for space to be used by all travel agents—a system that would save time and effort both for the agent and the owner. This was stated at the first a.g.m. Distinct headway has been made with the standardisation of deck lettering and numbering of cabins, and four major lines have agreed to, and have given effect to, the recommendations submitted by O.T.D. Alterations of this kind can only be acted on when a ship is undergoing major refit, or new ships are building. Other matters under review have been standard baggage allowance for all trades, standard type of ticket, and a simple system of fare grading.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Devon General Omnibus and Touring

An interim ordinary of 2 per cent, tax free, is being paid by the Devon General Omnibus and Touring Co., Limited. The increase in the interim is intended to equalise payments and should not be taken as an indication that the total net distribution for 1959 will necessarily be any greater than the equivalent of 10 per cent less tax, at 7s. 9d. in the £. The total for 1958 was 10 per cent, less tax at 8s. 6d.

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